STWE REVIEW

JULY 1959

Volume 6 Number 3

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A NOTE TO CONTRIBUTORS

Contributions to the *Review* are always welcome; short articles of 500 to 1000 words are most easily fitted into our small magazine.

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Articles should not exceed 2500 words plus three illustrations.

We assume that every article is approved by your company before it is submitted. The authors' names and affiliations should be on the manuscript. A short biographical note is most helpful. This note should include the present title of the author, the full name of his organization, and complete information about books, other articles, or any other publication credits. Please address all contributions to the Editor; the Review Committee will read your article and our publication plans will depend on their collective judgment.

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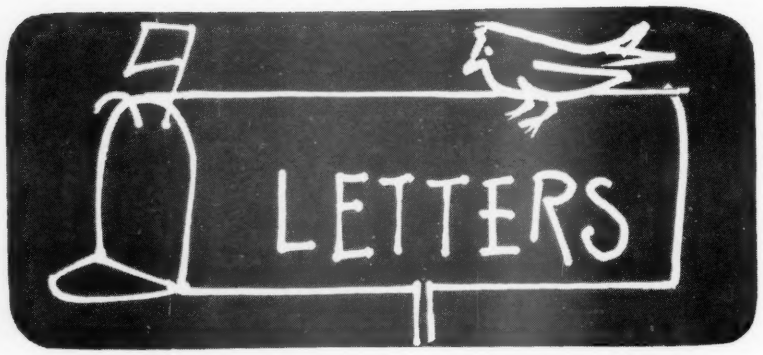


February 17, 1959

To Editor, *STWE Review*:

I should like to (dis)agree with Mr. Milton Aronson's comments in the *STWE Review* of April 1958 and January 1959: Editing and writing are two distinct activities, as STWE has acknowledged in its name; and editing certainly is "a teachable, learnable technique." But so is writing.

Not too long after I learned the mechanics of forming letters and spelling words, I was shown pictures and told to describe their contents in writing. I was taught to do this in an orderly fashion, going from the periphery to the center, from left to right, etc.; to observe and record more and more details as time went on; and to compare pictures on the basis of different criteria. Then came "How I Spent the Holidays," "A Visit to the Circus," and the others that, I am sure, we all went through. Much later I learned that this kind of writing is called exposition.

Now technical and scientific writing is nothing more than exposition. Whether exposition is taught in "grammar" schools these days I do not know, but it certainly has been and can be taught and learned. Our special type of exposition contains elements not necessarily found in other types of expository writing, e.g., equations, tables, graphs, and references. Thus, in addition to the general rules of exposition, special rules have been evolved for preparing these elements. The mere fact that they *are* rules indicates that they can be taught, learned, and applied.

There are degrees of proficiency in this as in any other discipline. I shall gladly agree that some people show more aptitude than others, be that because of native ability or personal interest that, once aroused, has been fostered by teachers, parents, and friends. More important, many scientists and engineers learn sooner or later that some proficiency in writing is absolutely necessary for advancing to the more responsible positions. If they have not appreciated clear writing for its own sake, they then learn to value it for purely selfish reasons.

Aronson and I are pretty well agreed on wanting meatier contents in the *STWE Review*. The problem is that technical writing and editing is an art rather than a science. Expository writing as well as editing are already covered in many texts and style manuals. True, some aspects may have escaped the authors of these books and should be recorded in these pages; could we hear from Aronson on editing? But, unless we have research projects on writing and/or editing, I should think that publications dealing with new information on writing or editing will remain scarce. Although I, too, should like to see more meat in the *Review*, the original "how to" paper can hardly be expected to form the backbone of our journal.

Ernst M. Cohn
U. S. Bureau of Mines
Washington

February 19, 1959

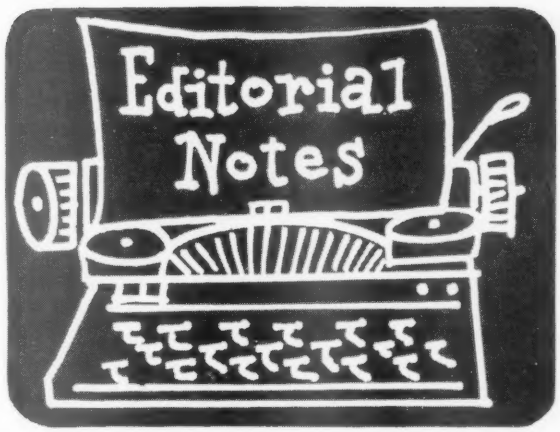
To Editor, *STWE Review*:

Mr. Ernest Cohn agrees with me more than he disagrees, and more than he realizes.

The major point in the issue I raised of technical editing versus writing is that the adult technical worker in this country has learned (i.e., been taught) all the writing skill he needs once he has graduated from high school. The average adult in the United States has been taught to write legibly, if not clearly or grammatically or unambiguously. As Mr. Cohn admits, once the individual has learned to "write," the degree of proficiency at writing is largely artistic and personal. Few outstanding writers studied "writing" or even increased their proficiency with time. Writing is largely an art, once the fundamentals have been taught (and learned).

The editing function is entirely different. It refers to the preparation of what has been written by another into a form that can be read and understood by the intended audience.

(Continued on Page 32)



Our guest editorial is what the author terms "a minority opinion . . . in protest against 'publications engineering' and the rest of the euphemisms currently popular among those who seem to feel that there is something faintly disreputable about writing." Because we do not believe his piece to be a minority opinion, we are happy to publish it as a thought-provoking challenge of our perspective as technical writers.

The author, Robert D. Resing, is a technical writer in the engineering department of Cessna Aircraft Company, Wichita. Resing began his writing career on the staff of his father's weekly newspaper in Wichita. Following this he was for eight years employed as a technical writer with Beech Aircraft Corporation. He joined Cessna in 1958.

LET'S GET THE HORSE UP FRONT AGAIN

Myself when young did eagerly frequent
Doctor and saint, and heard great argument
About it and about; but evermore
Came out by the same door wherein I went.
—Omar Khayyam

Like the Tentmaker, I'm confused. I wander through articles and earnest discussion about the qualifications and formal education of a technical writer: the engineer-always, the engineer-sometimes, the sort-of engineer; the PhD, BSc, MSc arguments; and I get lost.

Maybe we've become too technical.

In order to state clearly the qualifications for a job — or a profession, if you will — and set up educational standards, we must first define the job, starting with the essentials. Otherwise we can survey to our hearts' content, interview ad nauseam, pile statistics row on row. And finally, we'll end up just like old Omar at the university. I believe that's been happening to us.

I submit that the first duty of a technical writer is to write.

Everything else is ancillary: research, art preparation, editing, reproduction, distribution; though often these, too, are part of his assignment.

The technical writer shares that duty with the newspaper writer, the novelist, the poet, the storyteller. He is merely a writer whose subject matter is some science, or art, or craft.

It's sad but true that not all technical writers chose it of their own free will; some failed to realize what they were getting into and others simply got stuck with the job. That is to be expected when any new field of endeavor appears; one of the big contributions of the Society of Technical Writers and Editors should be the assurance that in the future it will happen less frequently.

What is writing—technical writing or any other kind?

In its essence, writing is assembling on paper the symbols for ideas in the proper manner to convey those ideas accurately to the mind of the reader. Words are symbols which evoke images in the minds of those who hear or read them — images both intellectual and emotional. Words thus are a writer's basic tools, and a thorough knowledge of semantics is essential. Grammar and spelling are not enough; the mere formal study of semantics is not enough. A writer must choose his words deliberately, with a reasonably accurate knowledge of the images they will evoke in the minds of his readers.

LIBERAL EDUCATION

A writer's education should begin, therefore, with a rigorous and wide-ranging curriculum in the liberal arts, formally or otherwise.

The purely scholastic phase of a writer's education perhaps may end with a Bachelor of Arts. A writer's informal education, on the other hand, can have no end, unless he will give up writing. For the day after he stops learning, he will stop having anything to say. And the day after that, people will stop listening.

There is a second, though equally important, reason why a writer — technical or otherwise — should have a liberal education. Just as the end result of his effort is an image in the mind of another person, so is the raw material with which he works an image in the mind of another, at least in part. The hardware may be in existence, the drawings complete, the test results tabulated. But for the essence of the thing — the how and why — he often must employ that subtle art known among scholars as "brain picking." And here psychology will avail him considerably more than differential calculus, for successful brain picking requires personal salesmanship of a high order, and infinite patience and tact.

The third, and perhaps most important reason for a technical writer's having a liberal education is illuminated by a comment in Dr. Albert Einstein's foreword to *The Universe and Dr. Einstein,* by Lincoln Barnett*:

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(*Continued on Page 25*)

Form and Style in Technical Reports*

Harold B. Simpson

The technical report, as employed in industry and government, is indeed a curious phenomenon. A part of technical literature, in a real sense it is not literary at all. Nor is it, although it borrows certain techniques, a journalistic report in the sense of bringing back, seasoned with human interest, an account of some newsworthy occurrence. It is scarcely an exercise in rhetoric, though it employs sound rhetorical principles. What is it? It is a communication especially designed to convey factual technical information from one who has it, or has accumulated it, to persons who need it and are entitled to it. Thus virtually always it is a communication with a closed circuit, a communication of unique form, and one possessing distinct style characteristics.

The form of a technical report is undoubtedly its greatest asset. It is not an accidental form. It is the structural framework specifically designed to meet definite requirements and to carry the content load. This framework, made conspicuous by a logical system of headings, is always an organic one. It is never a mere clotheshorse upon which garments are hung. It is the pattern by which the cloth is cut and fabricated into clothing.

Pattern implies logical order and singleness of effect. Robert Louis Stevenson pertinently has said, "If a man can group his ideas, he is a good writer." Grouping ideas to achieve unity of purpose means organization. Engineering reports are usually organized around the basic experiment or problem under study and normally reflect an introduction to the problem, the solution procedure employed, the results obtained, a discussion of the results, conclusions, and sometimes recommendations. Actual development may follow the methods of definition, illustration, comparison and contrast, or enumeration of detail.

But whatever the form and method of development employed, the achievement of an effective report, in which purposed perspective and limitation are given the problem, will best result from good planning. Good planning means the use of an outline to guide the arrangement of the material. The outline as such does not appear in the report, but is reflected in the topic headings and in the table of contents.

INDUCTIVE AND DEDUCTIVE REASONING

These, however, are but the mechanical rules of good form and, though frequently violated, remain relatively easy for the reporter to observe. It is the more subtle errors in sequential ordering to achieve form, the fallacies in reasoning toward conclusions, that are particularly perverse. Although pertinent evidence, properly treated, may well produce conclusions of sound and useful validity, the pitfalls are many. The reporter, desirous of certain ends, unconsciously stacks the cards, leaps to over-quick readings of them, or simply ignores their significant aspects. Consequently in ordering his report he bends its framework to the desired direction of his data rather than preserving, through the framework, a strictly logical approach.

In reasoning inductively toward conclusions, the report writer should take care that he has employed enough data to constitute a valid sample. He must avoid implausible extrapolations and use only fair samples. He must beware the fallacies of relevance that lead him to ignore the original proposition to be proved and to substitute for it some related aspect more easily substantiated. He must not appeal unduly to authority, for this appeal tends to confuse opinion with evidence and to short-circuit the testing of an hypothesis. He must be wary of the easy road of analogy, making sure the points of similarity he compares are truly relevant and are not invalidated by more significant differences.

In establishing causal relationships, he must guard particularly against the fallacy of "after this, therefore because of this." John Stuart Mill, a hundred years ago, formulated rules of causal relationship that, reduced to

*Presented at the 1956 AAAS Conference on Scientific and Editorial Problems, New York, December 26-28, 1956.

the joint method of agreement and difference, depend upon the finding of pertinent similarities, differences, and related variations in the antecedents and consequents of a phenomenon. Required, of course, is a proper definition of the antecedent circumstances.

In reasoning deductively to conclusions, the reporter may fall prey to certain *non sequiturs* produced by unwarranted assumption or by faulty inference. A conclusion is not deduced by begging it, by laboring under loaded allegations about it, or by assuming too quickly the existence of a dilemma as to its possible results. Nor, in inferring from premises (engineering writers at least implicitly use the syllogism) can a valid conclusion be reached by employing an undistributed middle term. Valid inferences may be drawn from two related facts or statements, but the relationship between them must be established by a middle term distributed in both premises. To be distributed, it must apply to the complete class denoted by it, not to just a part of it.

Still another concern in this matter of proper deducing in reports is the differentiation of conclusions from recommendations. The two are often confused. Conclusions are derived generalizations obtained from an examination of the data and the application of sound logic to them. Recommendations, on the other hand, represent specific suggestions for action growing out of the derived generalizations. Conclusions are obtained truths; recommendations point only to the practical usefulness of these truths. Nevertheless, in a certain sense recommendations constitute the acid test of the reporter's efforts. Truths are reached for the sake of their applicability to given research projects or to engineering developments. Thus their practical significance must be carefully set forth.

The defects we have described in both inductive and deductive reasoning are an unfailing means of losing the reader's respect for a report. No matter how neat the copy may appear, how replete with good illustrations, how trim and consistent the headings, the report must say something. If the represented reasoning is not itself consistent and properly segmented, the report will say nothing, or what it does say will be so confusing that it will be thrown aside and ignored. The report, in short, must have a logical form evolved from an orderly advance toward valid conclusions. Equally vital, however, is the vehicle for carrying the information and its ordered significance, the words themselves of the report, or the report style.

LOGICAL STYLE

In speaking of the stvle of a report, we refer to the elements and to the qualities of style. Logic again is necessary in the handling of these. But without categorizing faults according to such semantic fallacies as equivocation and amphiboly, we can point to certain precautions to observe in handling the elements and in achieving the necessary qualities of style in technical reporting.

Among style elements, sentence structure and diction account most for the readability and cogency of report literature. It is imperative that clarity and logical relationship exist in the sentence. Behind any attempt to assure these is a true consideration for the reader. The reader most easily grasps ideas in small bits supplied him in clear succession and in words he understands. The propensity to abstract thought and the passion for detail of the engineer, though excellent characteristics for his profession, ironically hinder the expression of his thought. Completeness is necessary; yet when several qualifications are attached to the same idea in a sentence, clarity suffers. This is not to say that only simple sentences should be employed. Technical observations are seldom unqualified, so that the use of the compound or complex sentence is often required. The point is, however, that such sentences should not be overloaded. The writer should not feel it necessary to string a series of qualifying details onto the same statement that announces a fact. Such a practice, moreover, tends to introduce illogical shifts and references, dangling elements, and faulty parallelism into the sentence.

In addition to spreading qualifications beyond a single sentence and to maintaining logical coincidence within the sentence, the expression of ideas in fewer and plainer words greatly contributes to reader understanding. Excess verbiage and precocious word choice interrupt the efficient transfer of meaning even in simple sentences. It is frequently necessary for the sake of precision to use long technical terms. For that reason, the reporter should strive elsewhere to use all the short nontechnical words he can. Behind the precocious use of words is the desire to impress—perhaps even, and after some practice, a self-induced hypnotism on the part of the writer with his own vocabulary.

JARGON AND FIGURES OF SPEECH

Although it may be admitted that the meaning of words in context is more important than their length or their technicality, this fact does not constitute license for jargon. In one sense jargon takes the form of so-called "officialese" or "gobbledegook," in which a pseudoscientific aspect is given to simple and even obvious statements. George Orwell, author of *Animal Farm* and *Nineteen Eighty-Four,* effectively parodies the form as he takes the sentence from Ecclesiastes:

> I returned, and saw under the sun that, the race is not to the swift, nor the battle to the strong; neither yet bread to the wise, nor riches to men of understanding, nor favour to men of skill; but time and chance happeneth to them all . . .

and converts it to:

> Objective consideration of contemporary phenomena compels the conclusion that success or failure in competitive activities exhibits no tendency to be commensurate with innate capacity, but that a considerable element of the unpredictable must invariably be taken into account.

In another sense, jargon describes the specialized vocabulary of a particular coterie or profession. This time more honestly used, it is still equally incommunicative. So specialized has the realm of technical knowledge become, even within a particular discipline, that an engineer or scientist can hope to speak only to few as specialized as he in a given subject. It is the duty of the professional man to translate, so far as possible, the hieroglyphics seemingly generated within his specialty.

Aside from jargon, the technical reporter will be wary of figurative speech. Metaphors and other figures may be employed occasionally when they are truly illuminative and come naturally. The writings of Faraday, Darwin, and Huxley reveal numerous examples of their legitimate use in illuminating or explaining new ideas. The pursuit of figures merely to color style is not only affected, but actually interrupts the efficient transfer of meaning. Moreover, figures used decoratively are too often very trite ones.

QUALITIES OF STYLE

In discussing some of the elements, we have been pointing to certain qualities of style that should prevail. Style elements, of course, are governed by the qualities of style. The qualities themselves reflect certain attitudes of mind and the achieved experience of the writer. If the end of style is an unobtrusive transfer of direct thought, the qualities which accomplish this end are precision, clarity, objectivity, and economy.

Precision in style denotes a highly exact correspondence between the matter conveyed and the conveying words. It stresses the employment of definite, concrete terms, the narrowing down of necessary abstractions, directness of syntax, and a disciplining of mind toward specificity. Difficulties in achieving precision stem first from an insufficient mastery of subject matter and only second from an inability to find words or to shape sentences. When the problem has been thoroughly analyzed and understood, the words come.

Clarity is a natural concomitant of precision. It consists in making the carefully selected words and syntax understandable and readable. It includes pointing for effect. The wide use of periodic sentences, in which the meaning is reserved for the sentence end, is no mere random occurrence in technical exposition. It reflects the common mental proclivity for end emphasis—the saving of final position for the significant. Readability means a rhythmic flow, an easy grace, that carries the reader pleasingly forward.

Objectivity in style results from schooling the mind to reject personal feelings and to remain intent on the subject matter. Personal attitudes cause the writer to substitute his opinion for valid inference and to commit others of the fallacies of relevance. Personal attitudes color usage. The properly formal and impersonal characteristics of word choice and syntax give way to colloquialism, slang, and other improprieties of speech. Consistency in point of view breaks down. Whether the first or the third person is used, the desire for impersonality should not lead to overuse of the passive voice. Nothing contributes more to flatness or dullness in a report than excessive use of passive constructions. It robs style of vitality, and it promotes wordiness. It is hypercritical to argue that results cannot show anything or that a phenomenon is only impersonally discovered—never found directly by an experimenter. Objectivity comes down, in the final analysis, to the judicious use of restraint rather than to a mechanical adherence to the rules of impersonality.

Economy, as the word implies, is thrifty management in writing. It is the expending of words frugally and with an eye toward the benefit received for the cost absorbed. No word not pulling its weight—not of necessity contributing to the conveyance of the meaning—should have station in the final draft. Report revision is mainly condensation, the cutting away of useless "filler." Economy in style derives ultimately from cultivating an incisive directness in thinking.

CONCLUSION

Technical writing belongs to what DeQuincey terms the "literature of knowledge" rather than to the "literature of power." The function of the first is to instruct, that of the second to move. Yet these apparent differences are in essence closely allied—as indeed are style and form, which in reality have no difference.

Alfred North Whitehead in his *Of Education and Other Essays* says:

> Finally, there should grow the most austere of all mental qualities; I mean the sense for style. It is an aesthetic sense, based on admiration for the direct attainment of a foreseen end, simply and without waste. Style in art, style in literature, style in science, style in logic, style in practical execution have fundamentally the same aesthetic qualities, namely attainment and restraint.
>
> Style, in its finest sense, is the last acquirement of the educated mind; it is also the most useful. It pervades the whole being. The administrator with a sense for style hates waste; the engineer with a sense for style economises his material; the artisan with a sense for style pre-

fers good work. Style is the ultimate morality of mind. But above style and above knowledge, there is something, a vague shape like fate above the Greek gods.

That something is Power. Style is the fashioning of power . . . With style you attain your end and nothing but your end. With style the effect of your activity is calculable, and foresight is the last gift of gods to men. With style your power is increased, for your mind is not distracted with irrelevances, and you are more likely to obtain your object.

Let us, therefore, employ this "god-given" foresight, this large concept of style, merging content and form, in our reports so that we may attain ends relevantly and with restraint, "simply and without waste." Our reports will then appeal as well as inform. They will add cubits to the stature of knowledge, for they will have power. Ω

About the Author . . .

HAROLD B. SIMPSON *is a senior technical writer for the General Motors Research Laboratories at Warren, Michigan. Included in his experience are technical writing and editing positions with Naval Ordnance Laboratory, Westinghouse, and Bendix. He has also been a special lecturer in technical writing and editing for the Graduate School, Department of Agriculture, and for George Washington and Maryland Universities. In addition to being a senior member of STWE, Simpson belongs to the American Society for Engineering Education, American Association for the Advancement of Science, and the Modern Language Association. He has published or presented several papers on English usage and editorial problems.*

Canons of Ethics

Elsewhere in this issue the Canons of Ethics of the STWE are printed. Adopted by the Executive Board in October 1958, the canons were first published in the report of the National Executive issued at the Sixth Annual Convention, November 1958.

Credit for formulation of the canons goes to the Standards and Ethics Committee, with Edward B. Chester as chairman and Ruth Mason as vice-chairman. Other members of the committee are Dr. Paul Flint, S. Hubelbank, A. C. Martin, D. E. George, and R. K. Shnitzler.

The canons are based on a statement developed by the Engineers' Council for Professional Development as a standard for national engineering society groups.

The Writer and the Copyright

Allan Lytel

INTRODUCTION TO COPYRIGHTS

A copyright is actually the right to copy; it is a protection for the author, the publisher, and the reader. It is significant today that in our modern industrial society there is still no effective world-wide protection for authors. In the USSR, for example, American works are reprinted without royalty payments to the authors.

Copyrights had their beginning together with printing.

Philip Wittenberg is a lecturer in law at Columbia University and a widely known author in the field of copyright law and its interpretation. Speaking of the basic concepts behind literary property and its protection, Wittenberg says, "The seeds of law and its processes of germination lie old and deep in a matrix of use and custom. The law of literary property evolved not only from the creative impulses of man, but also from the inhibitions and prohibitions with which writing has ever been involved. From creation for pleasure and aesthetic enjoyment came the notion in acquisitive societies of payment and profit, from autocracy and despotism came prohibition and censorship. All of these comingled to give rise slowly to law governing literary property." [1, 2]

There is a firm basis in English common law for the principle of copyright which is the foundation of American copyright law.

In this country protection of literary work was established early. In 1786, for example, the State of New York passed a copyright act and when the Federal Constitution was adopted in 1789, the need for a copyright law was recognized. In 1909 a single copyright law was enacted to replace all earlier laws and to expand coverage. Amendments followed during the years, and finally in 1947 the law was codified and reenacted. It became Title 17 of the United States Code; this is known as the Copyright Law and has since been amended several times.

Copyright law has its international aspects as well. Under the guidance of UNESCO, representatives from 50 nations met in Geneva in 1952 to draw up a Universal Copyright Convention. This convention, which has been sent to the 50 nations for ratification, will provide for a uniform international copyright.

COPYRIGHTS AND THE LAW

You can obtain a copyright in two ways. When an article or a story is written the author automatically has a common-law copyright. He owns the written material just as he owns his house or automobile or the paper upon which he writes. But a copyright under law is something else. This is obtained by publishing with a proper notice, which includes the date and the name of the copyright owner.

Under English common law the author of the work has certain real rights prior to publication which are defined and recognized by our legal heritage. The author can make copies of the manuscript and give them to friends or submit them to publishers or do anything that he wishes with them provided that they are not made available or sold to the general public. This public availability is publication. The author, of course, has the right to publish or not to publish as he pleases. And he may sell the dramatic rights or the television rights or the translation rights without ever obtaining a statutory or copyright under written law.

All of these common-law rights are irrevocably lost when the author first publishes his work. It is at this point that one normally obtains a copyright under statute.

According to the Copyright Law (United States Code, Title 17), "the work copyrighted is distinct from the copyright itself, and the owner may sell or give away the material object (manuscript) without transferring his rights. In the same way the assignment of the copy-

right does not imply that the material object must be transferred too."

Wittenberg, speaking from the viewpoint of a lawyer, makes the sharp distinction between statutory copyright and common-law copyright. In *The Law of Literary Property* he says, "It is only statutory copyright which has a limited term. The common-law copyright discussed herein is a right in perpetuity just as much as such rights exist in tangible personal property. A right in a watch lasts as long as the watch. A right in a statue lasts as long as does the marble or bronze, but the right in literary property lasts forever, until one takes advantage of statutory copyright, at which point the statutory term of the year affixes."

In laymen's language this means that the common law of copyright lasts forever, but it is destroyed at once and completely when one obtains a copyright under statute or law.

THE COPYRIGHT LAW

The foundation for Copyright Law in this country goes back to our heritage of English common law and to the United States Constitution. The Constitution reads, "The Congress shall have power to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries (and) to make all laws which shall be necessary and proper for carrying into execution the foregoing powers."

This quotation from Article I, Section VIII, of the Constitution is the basis for Congressional authority to enact a national copyright law. However, as Nicholson[3] points out, there were copyright laws in this country before the Constitutional Convention; and Connecticut, Massachusetts, and Maryland established copyright laws in 1783. In 1790 the First Federal Copyright Act was passed.

The Copyright Office is a part of the Library of Congress in Washington. Interesting information about the common misconceptions of the Copyright Office is provided in *The Copyright Office of the United States of America* (Library of Congress, 1952). The Copyright Office, for example, does not issue copyrights. It is true, of course, that the Copyright Office issues certificates, and these can be admitted into court as evidence. But "the Copyright Office does not investigate or adjudicate the validity of any copyright. There is no provision in the Copyright Law, as there is in the Patent Law, for scrutiny of applications or copies to determine questions of originality or authorship. In such matters the claim of the applicant is its own evidence." This means, of course, that anyone can receive a certificate of copyright, whether or not he is the author of the material so presented. In the Patent Office each claim for a patent is investigated and measured against the other patents which have been issued. This is not the case with the Copyright Office.

The Copyright Office does *not* retain a copy of all copyrighted works in its files although it receives copies. According to Section 213 of the Copyright Law[4]: "Under the provisions of the Copyright Law of the United States, the Librarian of Congress shall determine what books and other articles shall be transferred to the permanent collections of the Library of Congress, and what other books or articles shall be placed in the reserve collections of the Library of Congress, for sale or exchange, or will be transferred to other government libraries in the District of Columbia for use therein." Thus, while the Copyright Office does receive copies of all material under which copyrights are issued, it is not bound under law to retain these copies.

The public cannot obtain legal advice from the Copyright Office or information about the status or copyright for individual works. Since the Copyright Office exists only as the office of records, it does not have the right, nor the obligation, nor the authority to issue legal opinions.

WHAT CAN YOU COPYRIGHT?

Under the Copyright Law virtually anything that is published can be copyrighted. This includes books, periodicals, and newspapers. The law is very broad. Under books, for example, many items are included which one may not normally consider in this category, such as catalogs, magazine articles, poems, short stories, and essays. It is important to note that what can be copyrighted is the expression of the material and not the published form of the material itself. One cannot, for example, copyright facts, but an author can take these facts and weave from them a short story, a magazine article, or a book which can be copyrighted. It is the mode of expression to which the writer is staking a claim.

Periodicals are considered to include magazines and newspapers, whether daily or weekly; proceedings of conventions and meetings; bulletins; and journals.

A third category of items which may be copyrighted includes lectures, drama, radio and television scripts or plays, music, and various expressions of the graphic arts such as drawings, maps, and photographs.

Items which cannot be considered as subject to copyright, under interpretations of the law, include book titles or magazine titles, names or trade names, laws or the opinions of courts, price lists or time tables, and—perhaps most important—news or items of fact.

Some government publications are not subject to copyright. These are in the public domain. It is im-

portant to recognize that while under the Copyright Law no publication of the United States government may be copyrighted, the law specifically points out that "the use of copyrighted material in a government publication does not, however, annul the copyright, nor does it authorize further use of such material without the consent of the copyright owner." This means that material which one might find in a government publication, which itself is not copyrighted, still could contain other material which is copyrighted.

HOW DO YOU COPYRIGHT?

The copyright procedure is simplicity itself. A person who is eligible and who owns something that he wishes to copyright must first publish the work. A copyright notice must appear in a "reasonably conspicuous place," which in books is normally the second or third page. The application form for copyright registration is completed and sent to the Copyright Office. The Registrar of Copyrights issues a certificate to the copyright holder which indicates that the author or his agent has complied with the law. It is not possible to copyright unpublished manuscripts of books, considering books in the broad classification of the Copyright Law, but unpublished material is covered and protected by the common-law copyright.

Two copies of the "best edition" are sent to the Copyright Office. The date of record is that of the registration certificate; the copyright itself lasts for 28 years and may be renewed for a second 28 years.

A copyright is by legal definition a unit or entity. One who owns a copyright owns it completely. But, it is possible for an author to transfer or assign his copyright to another person such as his publisher or his wife.

Since a copyright covers many things, such as original publication, magazine rights, and dramatic rights, one can license various parts of this copyright to other people. For example, an author of a manuscript can copyright it in his own name and license a publisher to produce the book for public sale in one or more countries. The author can, after this, license the republication of part of this material as magazine articles. Normally, when an author prepares a magazine article and sells it to the magazine, the entire issue of the particular periodical is copyrighted by the publisher. What the author turns over to the magazine in return for the check which he receives is usually the manuscript and copyright of his material. If the magazine later, at his request, gives him permission to use this material in another way, they are actually licensing him under the basic copyright of the original article.

Some magazines use a standard form on the back of the check which they send to an author upon acceptance of his material. When the author signs this and acknowledges his consent by cashing or depositing the check, he has transferred all rights and titles which he may have had to the magazine publisher. In most cases of nonfiction, such as with technical magazine articles, the author can obtain permission from a magazine to use this material in a book and in effect the publisher of the magazine is licensing him. The subsequent rights are sometimes exceedingly important in the case of fictional material. The motion picture rights or the television rights or the reprint rights are often more valuable than the original first-publication rights.

One of the most interesting facets of the copyright law is the matter of what is and what is not a publication. This is important to a technical writer for two reasons: (1) it is related to books and the possible loss of common-law copyright protection and (2) many forms of printed material are not publications in the legal sense.

According to Margaret Nicholson[3], publication is the "selling or distributing printed copies (or a copy) to the general public or distributing or selling mimeographed, multigraph, or typed copies to the public, unsolicited or on request or sending out copies on subscription or being printed in a newspaper, periodical, or magazine, or being placed in a public library with no restriction against being circulated (this is sometimes disputed)."

According to the same source it is *not* publication when copies are distributed to a few persons for criticism or review, or when a manuscript is submitted for criticism or possible publication, or even when a manuscript is sold if the person sells only the manuscript and not the right to publish. This last is the most interesting point. The manuscript itself, as a physical object, and the right to publish the manuscript are two different things. The author can sell either or both at his discretion. Selling the manuscript alone need not be the same as giving permission to publish.

Book titles are part of the copyrighted material, but titles alone are not protected. Under neither statutory copyright nor common-law copyright may one claim the exclusive use of a title although books and other works are copyrighted by title. The title alone is not permitted a copyright. One would perhaps rather have a unique title for his own work, but if the title alone has been used by someone else, there is nothing to prevent one from using the same title—that is, nothing in either a legal or moral sense.

It has been held many times by the courts, however, that using the title of another work to deceive or imitate or deprive the original author of his property rights is indefensible. There are, for example, endless books titled *Report Writing,* but if John Jones were to have a best seller titled *Report Writing* and if another publisher were to market a book with exactly the same

title in attempting to deceive the potential buyer, this would be an infringement of the original author rights.

THE DOCTRINE OF FAIR USE

Under the Copyright Law, "the author retains unlimited rights at common law or in equity to prevent the copying, publication, or use of his unpublished work without his consent." But this does not forbid "fair use" of published material.

One cannot do any reasonable amount of research without using the works of others because by definition research means "to search again." Beginning authors and students are sometimes worried about the ethics of using the works of others. It is entirely within the bounds of reason to quote certain material from a published document without infringing upon the copyright. This is the doctrine of fair use.

What constitutes fair use depends upon the work itself and how much of it is used or quoted. For example, quoting three lines of a six-line poem is using half the work, but in a 400-page novel quotation of two or three lines or even several paragraphs cannot destroy the use or validity of the work as a whole. Margaret Nicholson[3] gives seven cases in which either direct quotation or quotation by paraphrasing is considered legitimate without the permission of the copyright owner:

1. Dramatic and literary criticism. In any review of a published work it is permissible to quote short passages or to describe the contents of the book in rather considerable detail.

2. Mimicry, editorial comment, parody. One can use short portions of the given work in such areas without restraint.

3. Incidental or background use. It is permissible and customary to use literary material to provide a background for a new work of either fiction or nonfiction.

4. Dictionaries, compilations, or other compendia. It is quite impossible, of course, to complete an adequate compilation in any individual field without quoting, at least in some degree, from previously published works.

5. The use of previous works such as in the scientific field in the writing and preparation of new ones. All scientific books are indebted in some measure to their predecessors, and no one has ever published a scholarly work based solely and completely upon his own original research without assistance from other scholars.

6. Synopses of literary, dramatic, or other artistic work. One can publish a synopsis of an artistic work without infringement of any sort.

7. The spring board or jumping-off use. Again it is quite common to use the published work of another as a starting place to do additional work on related topics.

All of these are areas where one can quote the work of others, just as I have used the work of Margaret Nicholson in this article.

Under the doctrine of fair use, based upon a multitude of legal opinions, one is permitted to use certain portions of copyrighted works without asking the owner of the copyright. What is fair use in one case may not be fair use in another case, and it depends upon the original work, the amount of the work which is quoted, and the use to which the quotation is made.

Nicholson quotes from Richard De Wolf[8] (a matter of fair use): "It is convenient to distinguish between permissible use of a copyrighted work, which the law does not forbid, and fair use strictly speaking, which is a use technically forbidden by the law, but allowed as reasonable and customary."

Wittenberg discussing fair and unfair use says, "It was never intended that the copyright laws should deprive workers in a given field, such as science or the arts, of all previous works, as otherwise the progress of these arts would be hindered. So when Einstein developed the theory of relativity and published it, an immediate interest was aroused and many persons wrote secondary works in the field. Necessarily, they discussed the previous work and Einstein's revelations, but in each case the question was, did they utilize him as a jumping-off place?"

BE CAREFUL WHEN YOU WRITE

Just as an author requires and is given protection, so he must exercise caution in writing because of the long life of the printed word. There are several legal dangers in writing.

One literary pitfall is known as libel or slander. According to Webster, libel is "any statement or representation, published without just cause or excuse, or by picture effigies, or other signs, tending to expose another to public contempt, or ridicule." Slander from the same source is "deformation, oral or written, specifically a false report maliciously uttered and tending to injure the reputation of another." Wittenberg points out that "libel, like other ills, may be prevented by careful and studied examination before the emission of material. Libel in law is a tort, that is, civil wrong, which is distinguishable from slander by the permanence of form which it has."

Legal questions of copyright law also revolve around the terms plagiarism, piracy, and infringement. These words do not mean exactly the same thing.

Plagiarism is usually defined as passing off the work of another as your own; it is copying the work of another. Infringement is, however, a matter of conflict, and infringement is concerned with the taking of copyrighted material. Piracy is, as Wittenberg points out, pure theft or larceny. But it is possible to be a pirate without having legal action taken against one. The publication of copyrighted material after the copyright is expired, for example, is piracy that is not punishable. The collection of material from magazines in which the copyright is expired comes under this category.

For the writer who wishes to refer to the works of others and avoid being accused of any of the several forms of literary larceny can best protect himself by adequate references to the prime source of material. A thorough researcher, for example, can often build a better case by going to the original source rather than to an author whose interpretation is two, three, or four times removed from the original work.

It has been said that all one has to do to be accused of plagiarism is to be successful, and indeed there is a marked positive correlation between wide commercial success and law suits. Few smash hits, either on the stage or in book form, have ever been free from some form of litigation, and conversely few authors who have unsuccessful novels or plays have ever been bothered by law suits.

Copyright law is a part of our legal structure with its origins rooted deep into our Anglo-American heritage. The author can take full protection of the safeguard which the law provides. But this in no sense frees the writer from obligations both legal and moral. One can, within quite flexible limits, quote from and use the work of others. And the writer must realize that the printed work can inform but, at the same time, it must not encroach upon the rights of others. Ω

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About the Author . . .

ALLAN LYTEL *is Manager of Proposal Coordination for the Crosley Division, AVCO Corporation, Cincinnati. He has had ten books published, the most recent of which was* Technical Writing as a Profession, *which went on sale early this year. In addition he has contributed to many well-known technical magazines.*

A Senior Member of STWE, Lytel has served as Editor of the STWE Review *since its inception in 1957. He is also a member of the IRE, a charter member of the IRE Professional Group on Engineering Writing and Speech, and a member of the Professional Group on Vehicular Communication.*

He is presently completing graduate work in technical journalism at Syracuse University.

The Personality of Technical Writing As a Poet Sees It*

Henry Birnbaum

Foolishly or not, a poet often uses language to overcome the barriers of explicitness. Wisely or not, the technical writer seeks to pen his language within the walls of explicitness. Thus, leaving out matters of content entirely, how different are the products of the poet and the technical writer.

Another way of stating this difference is: Poetry seems hard to read and may be easy to write. Conversely, good technical writing seems so easy to read, yet we know with what difficulty such ease is attained. These are kinds of contrasts. They are peculiarities of making language functional, either for science and technology or for poetry and the emotions. The problem of intercomparison between written science and poetry is indeed confusing.

Still another way of saying all this is: Poetry deals with connotation — the several possible meanings of a communication, the ambiguities, the inferences. Technical writing deals with denotation, the oneness of terms, the clarity and uniqueness of definition. The goal is to achieve the principal unambiguity in a message.

One final way of saying all this: The poem has a value inherent in itself and a value in the making. It is a device for arousing private responses both in the poet and in the reader. And these responses carry no necessary burden of uniformity. Think how a piece of art (a painting in a museum, for example) persists despite the wide and varied reactions, how it thrives on this apparent lack of uniform response. The technical article is completely different. It is a purposeful, driving thing. It has a mission. It moves from publication to abstract to reprint to information storage and retrieval. If it is to survive this ordeal, the technical article dare lose nothing in the transfer. From transmitting station to receiver, from technical writer to technical reader, there must be no distortion, no attenuation, no loss of intelligence. The technical article is the actual record of thought, of observation, of experiment, of procedure.

Poets and technical writers† both use a common language storehouse, the dictionary, and they share in the universal desire to communicate. Furthermore they are driven by notions of organization, prestige, and recognition. Beyond these the differences are more apparent. Poets and technical writers appear to be separate species. Their purposes are different. Their vision is different. Their minds function in trained but different ways. Sometimes I think that even their very nerve paths are linked differently. The poet's nerve-communication link probably looks like a William Carlos Williams poem. The technical writer's looks like an organization chart.

Now why am I exaggerating these differences so? Because in any comparison between technical writing and poetry, differences are more immediately apparent than similarities. No layman, whatever his definition of poetry, could confuse it with the clear product, the technical article. The poet's message is fuzzy. His language is stretched and elongated. At other times it is condensed and capsuled. His words are abnormal. His analogies shock. His means seem devious. And on the other hand, the technical writer writes what he means, without deception. He doesn't lead his reader astray; he's all candor.

Again disregarding considerations of content, why are the writings of poet and technical writer so different? The answer lies in my opening statement of paradoxes, which leads me to the purpose of this article. Since they are in such contrast, what can the technical writer learn from the poet? What can the honest tradesman learn from the confidence man? Chiefly the escape from conformity by the exercise of imagination.

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*Presented at the STWE Sixth Annual Convention, Washington, November 17-18, 1958.

†By technical writer, I mean primarily the professional who works in a technical information office.

TECHNICAL WRITER'S FORMAT

The greatest burden of the technical writer is that he submits to routine — routine in organizing a technical paper, routine in the use of language, and routine in his relation with his audience or clientele. The disease of routine (sometimes identified with conformity) is epidemic and can be fatal. We pass it on to our colleagues and we all die of it.

At his apprenticeship, the technical writer is given a "guide," a manual. From then on the penalty for originality is severe. He comes into a new office of technical writers for his first day on the job. He is told *the* way to do things.

The first thing that a technical writer learns of his art is that it is not an art form. It is a practical, serviceable process, and the technical writer is a practical communicator. He learns a pattern, a formula. He is given no time for "art for art's sake," no time for philosophy and that sort of ephemera. So here we have isolated a principal guilt: the technical writer lacks individuality. He is an organization man if there ever was one.

Let's look at the format of the technical writer. He understands, fully appreciates, the requirements of his job. The idea-content has primacy. The data must be clearly and explicitly stated. But from this he concludes that the manner of presentation is secondary, as if there were a problem of competition between the content of an article and its exposition, as if he had to establish a priority.

The poet knows this to be an unreasonable position. He says that you cannot separate what you have to say from the way in which you say it. Looking for something original to say, the poet says that the whole *is* the sum of the parts and the parts *cannot* be separated from the whole. So the poet recognizes that the form cannot be detached from its language and its idea content. He would no sooner submit to a routine format than he would submit to a cliché.

Then where did the technical writer fall into this evil dualism? First, he discovered efficiency. He said, I have to think of technical writing as a productive activity. It must be competitive in our society. Second, he found satisfaction in justification. He said, look how efficient I am and how much more I can say.

There is a kind of self-righteousness in all this justifying, and I am afraid that it is principally a cause for mediocre technical writing. I believe that it produces a kind of general acquiescence which sponsors conformity and the decay of spontaniety.

Think of those technical pieces which have had an impact on you. What makes them memorable? I think it is this: that they have successfully modified the requirement of conformity to suit their private mode and the individuality of the subject.

This business of "private mode" will lead shortly to a consideration of style, but let us return to such problems as format and organization of the paper. There is something psychologically disturbing in the rather universal agreement that the sameness of format yields more good than it loses.

I think there is a kind of submission on the part of the technical writer to that of secondary role in the world of science. Mind you, I understand that most often the technical writer may be the scientist or the engineer himself. Even in such cases — possibly because of such cases — the technical writer takes a back seat to the researcher or the experimenter. In all this there is the implication of a chore being added to discovery, a burden which is the penalty for play.

The poet says that the articulation of an idea is in and of itself of the nature of discovery. Furthermore, he says, the record and form in which event and action are captured are a part of man's highest achievement.

I don't mean to be quoting poetic scripture, but in this there can be seen a difference in the intensity with which poet and technical writer approach their respective tasks.

Now let us take the case where the technical writer is just that, a professional writer who gives service to scientist and engineer. Again one sees that in this submission to conformity there may be a correlated submission of the technical writer to a secondary role in the scientific or technical organization. This is, in fact, generally the rule.

Why should this be? The poet doesn't accept it.

The answer lies in the fact that the technical writer readily admits that the manner of presentation of ideas is secondary to the way in which the ideas are developed. This is unacceptable to the poet.

STYLE OR PRIVATE MODE

Now let us turn to matters of style, or what I have called the private mode.

Here again the technical writer admits to a feeling of inferiority when he submits to the most oppressing of conformities, the rigid specification of expression.

Nothing is more apparent to the nontechnical reader when he makes an attempt at examining technical writing than its monolithic dullness. I am not dealing at all with the difficulties or the technicalities of the subject matter. I'm talking about sheer style, lack of imaginative variety, and the failures of arrangement.

One article faces another, and there is a sameness of tone, a distinguishing congruence of impersonality, a

barrenness of analogy, metaphor, and other writing devices. Are the streets of science so devoid of literary excitement, so populated with windowless architecture?

One theory of technical writing requires the removal of all personality. It seems to stem, by some shadowed reasoning, from notions of the purity and objectivity of science. The theory implies that by the removal of personality the facts will be made to stand out and thus to stand up under scrutiny. On the other hand, the inclusion of personality will tend to obscure the facts. The theory further implies that the removal of personality will achieve a product which can be impartially studied by Mister Everyman of Science. To stretch this even further, the theory breeds the belief that since the technical article should be similarly appreciated by Mister Everyman of Science it follows that it ought to have been created by Mister Everywriter of Science.

There is no really penetrating reason for this architectural and stylistic anonymity in technical writing. I think it seems to be characteristic of the American technical writer. Look at our journals and you find a sober regular manner and a charted path — the statement of the problem, the previous work, the design of the experiment, the observations. Is it necessary to approach investigation in this way? Certainly not. Anyone who believes that the scientist himself behaves according to this formula has been strongly misled.

Then again, look at the British technical article. How often have we been led to comment upon their style, how they give in to the whim of casualness, how they let charm seep into the severest of study descriptions.* Do the British always start with a formal statement of the problem? No sireee. They are just as apt to begin with a walk in the park where the kernel of the experiment fell upon their mind. What is lost by such indirection and what is gained? I leave that to the scales of your judgment.

VITALITY OF THE POET

The poet says that each of us has a uniqueness which should be shared in what we say. The poet says that there is much to be gained in adding ourselves to our knowledge. From his viewpoint there is another useful comment which could be made about the profession of technical writing. A poet recognizes, by way of Coleridge's distinctions, that there are degrees of creativity. Coleridge distinguished between the imagination and the fancy. The first he called the highest order of creativity, almost revelation, the articulation of the new insights. In science we might call this basic research if we were to stretch things. Fancy, however, Coleridge (without derogation, mind you) assigned to a lesser but important task. This facility was devoted to perfecting, restatement, and rearrangement of lesser knowledge. This we might call applied research and development. But I think that is taking the analogy beyond its limits.

The point that I want to make is that in poetry, there is a recognition of levels of creativity and activity.

Sometimes I think it would be useful if technical writers could be classed according to their creativity rather than according to their productivity, their organizational responsibility, or their technical background. It seems to me that a creativity classification of technical writers would be serviceable in assigning the right writer or editor to the right job. Doesn't it make sense that the same technical writer would not serve equally as a manual writer and as a writer on a team engaged in some fundamental study?

Perhaps a creativity index would help in making proper assignments. A technical writer with a flair for creative writing (maybe science fiction, but not necessarily so) might be effective in working with basic research scientists. Both would be interested in the conveyance of ideas. Neither is interested in detail. And yet they would complement each other in helping themselves to articulation.

The poet recognizes that the beginning of complex ideas often finds form first among like minds. Thus a creative scientist might well find comfort with a creative writer, and vice versa. And both might thrive in contributing to a common goal. On the other hand, a creative scientist might be stultified in satisfying the needs of a differently oriented though technically trained writer whose interest was primarily that of description.

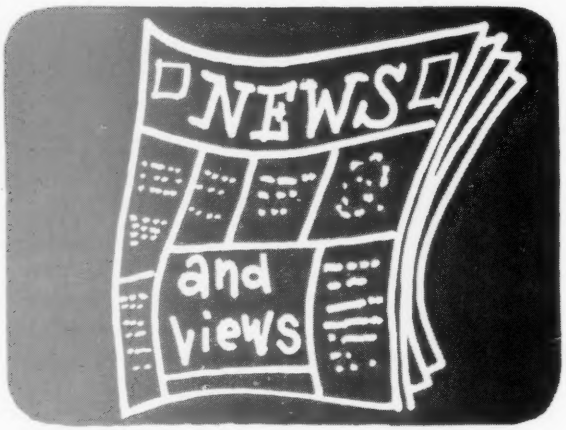
I believe it would be useful for the technical writing profession to examine itself from all of these points of view.

The poet recognizes that the most effective way to make an immediate change is through studied self-analysis and the dare of the experiment. Ω

About the Author . . .

HENRY BIRNBAUM *has been involved in technical writing, technical editing, and technical information for the past decade. He is presently Assistant to the Director of the National Bureau of Standards in Washington. For the past ten years he has also published poetry in most of the country's literary quarterlies and little magazines. His experience in both careers has contributed to this article, but he emphasizes that it is written principally from the poet's viewpoint.*

*As a sample, not British in this case, see Markus Reiner, "The Teapot Effect," *Physics Today*, 9 (September 1956) pages 16-20.



By Richard A. Hanousek

SUMMER ENGINEERING SEMINARS

The Pennsylvania State University recently announced its 1959 program of summer engineering seminars. Included in the program is a seminar in technical report writing, which is scheduled for September 13 to 25. The seminar is designed to provide scientists and engineers with practical instruction and supervised practice in the preparation of effective technical reports.

The program will consist of morning lectures and afternoon workshop periods. Lectures will include discussions of the characteristics of good technical writing and methods of achieving them; a review of the mechanics of writing; discussions of the organization of a report and of each of its components; and the use of such graphic aids as photographs, tables, charts, and graphs.

Christian K. Arnold, associate professor of journalism, is the coordinator for this seminar. The staff will also include Dr. Dwight E. Gray, program director of Government Research Information, National Science Foundation; and Arthur G. Norris, director, Technical Information, Engineering Division, The Vitro Corporation of America.

SECOND TECHNICAL WRITING INSTITUTE AT CSU

Colorado State University's second annual Institute in Technical and Industrial Communications has been scheduled July 6 to 10, according to Dr. Herman M. Weisman, institute director.

Palmer Hoyt, publisher of the Denver Post, will give the keynote address on the theme of this year's Institute, "Communications in a World of Expanding Knowledge."

Lectures by the staff will be supplemented by group discussions, films, laboratory writing exercises, and personal consultations. Participants may submit their own communication problems to a special problems clinic for review and criticism.

Staff members will include Melville Thistle, chief of the public relations branch of the National Research Council of Canada; Robert Carson, managing editor of *Product Engineering* magazine; Wesley Ballard, manager of publications, Motorola Corporation; Col. William E. Frame, commanding officer of the U. S. Army Signal Publications Agency; Dr. William F. Carstens, head of the technical information division of the Sandia Corporation; Dick Hodgson, executive editor of *Industrial Marketing* magazine; Willard G. Haselbush, business news editor of the Denver Post; and C. A. Brown, of the General Motors Institute Dept.

Weisman and Dr. Roy C. Nelson, chairman of the CSU Department of English and Modern Languages, will also be on the staff.

Two college credits will be given for completion of the course. Last year's Institute, first of its kind in the Rocky Mountain area, drew more than 50 participants from over the nation.

WRITING IS THE BUSINESS OF COMMUNICATION

A speech with the above title was presented in January to a group of accelerated girl students and their parents at Encina High School in Sacramento by Meta Ellis. Mrs. Ellis is a member of STWE and is employed by the Aerojet-General Corporation in Sacramento. Already science-and-language oriented, these students receive special instruction in mathematics, English, and science. Mrs. Ellis was the first of a number of speakers to tell the girls about careers in science.

In her talk Mrs. Ellis told the students of the opportunities that are available in the field of technical writing and editing. She briefly covered the various kinds of technical writing and suggested courses that should be taken in preparation for a career in this field.

Our congratulations go to Meta Ellis and other STWE members who are making young people aware of the opportunities available in technical writing and editing.

WASHINGTON STWE SURVEY

Recently the Washington Chapter of STWE formed a committee to gather a sampling of backgrounds, work

specialties, and incomes of persons engaged in technical writing or editing in the greater Washington area. The committee was composed of H. L. Shimberg, chief, Publications Division, U. S. Naval Ordnance Laboratory; Ruth Nordin, head of the Publications and Editorial Section, Soil Conservation Service; and Robert T. Hall, chief, Editorial Branch, Division of Information and Education, Forest Service. The committee prepared a questionnaire which was sent to approximately 600 possible employers of technical writers and editors. A report was prepared, based on the returned questionnaires, and a copy of the report was sent to the *Review*.

Table 1 — Results of Washington STWE Survey

Factor	Private Industry	Government
Replies to questionnaire (organizations)	43	44
No. technical writers/editors employed		
1	5	5
2-6	23	14
6-10	6	4
10-20	4	7
More than 20	0	6
Total	184	497
Salary schedule for writers/editors		
Same as engineering staff	21	18
More than engineering staff	3	0
Less than engineering staff	7	9
Members of writers'/editors' association	42	69
In-service training for editors/writers		
Yes	10	10
No	28	23

The data obtained from the survey are given in Tables 1 and 2. The following statements were excerpted from the report. Eighty-seven organizations replied, 43 private and 44 government; of these nine were courtesy replies from organizations that employ no technical writers or editors. This means that the 681 technical writers covered by this questionnaire were employed by 79 organizations. The largest single employer had a staff of 140 writers.

A study of the results revealed some interesting statistics:

1. By extrapolation, based on lack of response from large employers of writers, there are approximately 2500 technical writers of numerous varieties in the greater Washington metropolitan area. This is about twice as many as originally estimated.

2. Slightly over 80 percent of all technical writers covered by the questionnaire had bachelor's degrees or higher.

Table 2 — Results of Washington STWE Survey

Factor	Private Industry No.	Private Industry %	Government No.	Government %
Kind of technical writing or editing performed				
Public information (including speech writing)	41	12.6	191	27.1
Editing of staff-prepared technical reports	65	20.0	280	39.5
Editing of technical articles for semitechnical publications*	39	12.0	69	9.8
Writing instruction manuals:				
Aeronautical, chemical, engineering	55	16.8	15	2.1
Agricultural	9	2.8	23	3.2
Medical	7	2.2	22	3.1
Other	15	4.6	33	4.7
Total	86	26.4	93	13.1
Training manuals, technical textbooks	25	7.7	44	6.3
Engineering proposals	28	8.6	20	2.8
Technical advertising	14	4.3		
Parts catalogs or technical sales literature	20	6.2	0	
Education				
High school	17	10.3	110	22.4
College (bachelor's degree)	113	60.0	302	61.0
Master's degree	25	15.2	65	13.3
Ph.D.	9	5.5	12	2.5
Years Experience				
Less than 3 years	25	13.6	85	16.6
3 to 6 years	60	33.3	112	22.0
6 to 10 years	55	30.4	123	24.0
More than 10 years	41	22.7	190	37.4
Salary distribution				
Less than $4500	5	2.8	25	4.9
$4501 to $6000	38	20.7	81	16.0
$6001 to $7500	42	22.8	143	28.0
$7501 to $9000	57	31.0	118	23.3
$9001 to $10,500	19	10.2	104	20.4
More than $10,500	23	12.5	38	7.4

*House organs, science magazines, association newsletters.

3. About 59 percent of all writers had more than six years' technical writing experience. The largest single experienced group was that in government (190 of 492) with more than 10 years' experience.

4. Salary distributions showed that in private employ there were relatively few in the lowest salary bracket and more in the highest bracket. However, in the range

(*Continued on Page 30*)

Analytical Editing of Research Reports

Warren B. Bezanson

Most editors have through necessity developed a workable method of correcting and polishing the syntax, paragraph structure, punctuation, spelling, and diction of reports that they edit. This paper describes an analytical technique which should precede that part of the editor's job and establish a pattern for the subsequent conference with the author of the report.

The analysis requires consideration of (1) report organization as indicated by the headings and subheadings, (2) the textual apparatus (figures, tables, etc.) of the report, and (3) the summary, conclusions, and introduction. The editor examines each page of the report and, in the appropriate columns of the analysis sheet (Figure 1), copies the page numbers, headings and subheadings, test model designations, equation numbers, references to numbered equations, bibliographical citations in the form of reference numbers, and citations of numbered appendixes, tables, and figures as they occur in the text. He also compares the text and the author's list of symbols for accuracy and proper order of definition.

Analysis Sheet No.....

Report No..... Author..... Section.....

Title .....

Pg.	Heading	Model	Eq.	Eq. Ref.	Bib. Cit.	App.	Table	Fig.	Symbol

Figure 1 — Layout of Analysis Sheet

A condensed layout of the form used for the analysis is shown in Figure 1. Revisions in the text are indicated by red circles around the appropriate entries in the analysis sheet, which thus charts both the report and the editorial changes.

The accuracy with which headings label the different sections of the text, as shown by the entires in the second column, is first noted. Although these entries duplicate the table of contents (if one has been supplied by the author), copying the headings gives the editor a continuing awareness of the plan of the report and facilitates the location of items in the text during the subsequent analysis and conference. The model designation column may reveal inconsistencies or needless variations in test model nomenclature. Although items in the equation, bibliographical citation, appendix, table, and figure columns are usually referred to many times in a report, basically each list should form a regular sequence of numbers. Omissions or disparities in this numbering are noted. Inclusive entries (e.g., Figures 28-37) usually indicate the presentation of groups of related data that may need subsequent clarification. Clusters of duplicated numbers are marked for examination of the text for instances of needless repetition. Comparison of the list of symbols with text, tables, and figures of the report may reveal discrepancies or omissions that should be noted in the symbol column opposite the number of the page on which they occur.

The editor is now ready to make some of the revisions suggested by the analysis sheet entries; others he may wish to postpone until the conference with the author. Minor changes in report organization involving subordination or shifting of sections might fall into the former category. (It should be noted that such revisions may require renumbering of equations, bibliographical citations, appendixes, tables, and figures.) Proposals for major changes usually call for a special conference with the author before further editing is done. Model

nomenclature in the text may be standardized by making it conform to usage in tables and figures. Next, omissions and disparities in the numbering of textual apparatus should be corrected. When necessary, references to illustrative materials should be revised to ensure that the text clearly identifies, describes, and explains the tables and figures under discussion. In the case of inclusive entries (Figures 28-37, 38-47, etc.), the interrelationship of individual items within each group and the relationship of the group to other visual presentations of data should be defined. Repetition indicated by clusters of duplicated figure numbers should be eliminated; if the same clusters are referred to in different sctions of the report, it may be advisable to combine such sections under a single revised heading or to suggest that the author consider reorganizing the affected portions of the report.

Symbol usage and the list of symbols are corrected before or during the conference between editor and author. If extensive corrections are needed, they are usually made by the author after the conference.

At this point the editor should segregate tables and/or figures needing revision as shown by the preceding analysis and by comparison of these materials with the lists of tables and figures included in the report. These tables and figures are returned to the author during the conference with an oral or written explanation of their deficiencies.

Having surveyed the entire report, the editor concludes his analysis by carefully reviewing the summary, conclusions, and introduction, since these sections will probably receive more attention than any other part of the report except the tables and figures. If feasible, he revises or rewrites as necessary; if not, he notes his criticisms and discusses the problems with the author during the conference.

In most cases, the changes resulting from the foregoing analysis will also include a majority of the detailed textual revisions which the editor is called upon to make.

Analytical editing establishes a definite pattern for the conference between editor and author. Report organization, textual apparatus, summary, conclusions, introduction, and the editor's revisions and corrections of the text are discussed in terms of their relationship to each other and to the entire report. The editor's thorough familiarity with the structure and the details of the report, as well as the author's ability to see his work objectively because of the analytical chart, creates a friendly, cooperative, and productive conference. Ω

About the Author . . .

WARREN B. BEZANSON *is Technical Report Editor for the Research Department, United Aircraft Corporation, East Hartford, Connecticut. Formerly an assistant editor on the staff of G. & C. Merriam Company, dictionary publishers, Dr. Bezanson also taught technical writing at the University of Maryland. His most recent publication, "A Timetable for Report Writing," appeared in the January 1958 issue of* STWE Review. *"Analytical Editing of Research Reports" was adapted from a paper read at the 1958 spring meeting of the Technical Publications Association of New England and from a longer presentation to the M.I.T. 1958 summer session on editing technical reports.*

Telephone Time

Arthur S. Dlott

SCENE: LS *of administration building. Pan parking lot to show cars and people. Bring up music and* CU *to flagpole and waving flag.* CU *from flag to building window; dissolve through window to busy tech-writing office. Fade out music. Camera pans room and* CU *to telephone. Telephone rings.*

AL: (*Picks up telephone on second ring.*) Hello?

MIKE: (*Off camera. Voice only.*) Hello! Reports Section?

AL: Right! What can I do for you? (*Pause.*) Hold on a sec! (*Turns away from receiver and looks around room. Shouts.*) Bill? Hey, Bill! It's for you! (*All people in room stop work and look toward* AL. AL *waits, and with no response continues.*) Hey, Bill; Mr. . . . (*turns abruptly to receiver*) . . . By the way, who is this?

MIKE: (*Voice only.*) Mike Stone.

AL: Sure! Hold on a bit, Mike, I'll check for Bill again. (*Turns again to group. Work resumes as* AL *returns to the phone; again stops on shout.*) Bill? Anyone know where Bill is? (*Work remains stopped as people chat among themselves. Bring up sounds of mumbled inquiries and chorused replies of* Nope, Not me; Haven't seen him. AL *turns back to receiver.*) Hello, Mike? Bill's not here! Anything I can do?

MIKE: (*Split screen to CU of* MIKE *and* AL *on telephone.*) Who's this?

AL: Al Rock.

MIKE: Well, I don't know, Al. You know anything on Project Tiger?

AL: Nope! That's a little out of my line. I'm on Zebra. Hold again and I'll check whether any of the other people here are working on your project. (*Again turns to group.* MS *of group. This time, group has obviously not returned to work but have been discussing possible places Bill might be.*) Any of you folks been working on Project Tiger? You know, the job Bill's been on these past few weeks. (*Bring up chorused discussion and* No, Nope, Not me.) Any idea where Bill is? (*Repeat chorused answers.* AL *turns back to telephone.* CU *to split screen.*) Sorry, Mike, nobody here seems to be familiar with this project. I'll have Bill call you when he gets back if you want. Where'll you be?

MIKE: Tiger research center. Extension 000. Thanks Al.

AL: Extension 000 — I've got it! . . . By the way, Mike, are you familiar with Project Zebra? That's the one I'm working on. (*Pause as* MIKE *answers. Camera shifts to* MS *of* AL *in tech-writing office to include several people still discussing Bill and Project Tiger.*) Well, let me give you some of the background and maybe you can help me. You see, I've been working with Ted Pepple on . . . (*Fade out* AL *and bring up discussions from group in background. Camera pans room, stopping briefly on each cluster.*)

SCENE: *Dissolve tech-writing office and bring up* MS *of chicken coop. Into* CU *of group of chickens; bring up effects of cackling as discussion group mumblings fade. Bring up music to drown the cackling effects. Change music tempo to "rock and roll." Dissolve coop to* CU *of teenager sprawled on floor with telephone. Fade music.*

TEEN: Oh, you know! Miss Pepple, the English teacher I've been having trouble with this term. (*Pause.*) You don't? (*Pause.*) Well, anyway. She gave us this assignment and I've been trying to . . .

SCENE: *Dissolve to animation shot of cash register with dollar bills pouring out. Bring up music — original — and dissolve to end titles.*

This vignette may seem far-fetched to you, but many hours of telephone time are wasted by the careless disregard of efficient, common, business procedures. When

you answer a business telephone you should identify yourself by name and section and, where applicable, by assignment. It took Al and Mike almost a full minute to exchange this vital information. Immediate identification eliminates the "chatter exchange" that can tie-up company communications.

If Al had answered the phone properly, Mike's neglect of proper procedures would still have resulted in a lengthy delay. It took Al three questions to discover who was calling, what project Mike was interested in, and where Mike was calling from.

Al's second error was a combination of thoughtlessness and improperly enforced check-out procedures. He really should not have shouted across the room for Bill. Even if Bill were there, this would cause a work disturbance. Al should have taken the time to walk to Bill's desk to inform Bill of the call.

Proper check-out procedures would have made it mandatory for Bill to leave a note on his desk telling where he had gone, how he could be reached, and when he expected to return. Also, if Bill anticipated Mike's call, this note might well contain a reference to another person in the group that he has previously briefed on Project Tiger.

For those groups with secretarial help, the sign-out procedure can be established at the secretary's work station. Since she, in most instances, will handle incoming calls, this further reduces the wasted time for both the reports group and the caller.

Although this next point was not dramatized in our sketch, it is worthy of inclusion for completeness. This point is the fulfillment of the promise to leave a message to have Bill call Mike. Several standard telephone message slips are available for such use. Each includes the name of the party calling, the time of the call, the purpose of the call, and its disposition. These forms should be available at every telephone station.

In those offices where a secretary-manned check-out point has been established, all notes should be left with the secretary. Then, if all persons remember both to sign out and to sign in, the confusion of unreturned telephone calls should be completely avoided.

Remember, a telephone call is always unclassified. You don't include secret material in an unclassified brochure prepared for general distribution. Don't make this mistake on the telephone. In our skit we saw Al trying to acquaint Mike with the details of Project Zebra. Al's attempt must have exceeded the unclassified information level permitted on the telephone.

Let's reshoot the scenes for inclusion as a corrected "after" before our end titles. As you remember, we had dissolved the teenage scene to an animated cash register and had brought our background music back to strength.

SCENE: *Pan back from titles — they are appearing on screen within frame — to show camera and actors standing about.* CU *to group. Music fades.*

AL: Cut! O.K. now, let's run through from where the phone rings and I answer the way it should be done.

MIKE: Right.

DIRECTOR: Places! Lights! Camera! Action! (MS *writing office.* CU *to telephone.*)

AL: Reports Section. Al Rock, Project Zebra. Can I help you? (*Split screen to* AL *and* MIKE.)

MIKE: This is Mike Stone at Project Tiger Research Center. Is Bill Pebble there? I'd like to speak with him concerning the format on Tiger data.

AL: One second, Mike, I'll check. (MS *writing office. Camera follows* AL *as he walks to Bill's desk.* CU *to* AL *as he bends over desk to pick up note pad.* MS *office as* AL *walks back to telephone with pad.*) Hello, Mike; Bill's not here — he's at Tiger Control Lab, Extension 001. He's due back at 9:45 — about 15 minutes. However, Bill's left a note that references you to Jack Shell — on Extension 012 — for format information. Shall I have Bill call you when he returns, or will you call Jack?

MIKE: I'll call Jack! That's Extension 012, right?

AL: Right! I'll tell Bill you called and are calling Jack. Good-bye.

(*Hangs up.* CU *to* AL. AL *enters* NAME, DATE, TIME *and* DISPOSITION *on telephone message pad; carries pad and note pad back to Bill's desk. Music comes up. End titles.*) Ω

About the Author . . .

ARTHUR DLOTT *is Supervisor of the Reports Section of the Utah Division, Thiokol Chemical Corporation, at Brigham City, Utah. A graduate of the City College of New York, where he majored in advertising and public relations, Dlott has had five years' experience in technical writing and editing, advertising production, and public relations. In addition, he served as a newspaper editor and a feature writer for the U. S. Army.*

Dlott's experience with telephone procedures, for the most part, is a carry-over from his work as assistant advertising manager for the Vanderbilt Tire & Rubber Corporation, New York. This firm did all its selling by telephone. Consequently, proper telephone procedure became an important cost and efficiency item for the firm's operation.

Dlott has been with Thiokol since May 1958. He joined the Thiokol organization after 18 months with the Martin Company in Denver, Colorado.

Developing a Graduate Curriculum in Technical Writing*

S. P. Olmsted and Chris Sanford

Over the past five years Professor Sanford and I and a number of other people in the department have worked on the development of a graduate curriculum in technical writing at Rensselaer Polytechnic Institute. I see no way of avoiding a discussion of those five years of experience. At the same time, I find it somewhat embarrassing to make so many allusions to our own methods and our own school. So let me say right away that I'm doing it not because I think we have the answers to everything, but because it is what I know to talk about. If I ignore this experience, I shall talk in a vacuum. Please take it that way and remember two things: (1) that there are a lot of ways of educating technical writers and (2) that in describing a curriculum I am talking about hopes and plans, not just about a present program.

Before we can get down to details, we need to see the graduate education of technical writers against the background of graduate work in general. As a teacher, let me say to you who are practitioners: don't expect too much of the schools, and above all don't expect the wrong things.

The kind of training a student gets in graduate school in any field does not make him more immediately valuable on his first job than the man who has already been in that job for some time. Any veteran, regardless of his education, can do better than any rookie—regardless of *his* education. But if this is so, then what is the objective of an educational program? I think it is to train the student in fundamentals, so that in the long run he will be better able to cope not with just one job but with many different jobs, and with changing jobs. He will know how to tackle new problems as they arise. Above all, he will know how to profit by his experience and turn that experience into further education.

*Presented by Dr. Olmsted at the STWE Sixth Annual Convention, Washington, November 17-18, 1958.

DILEMMA OF GRADUATE EDUCATION

And this brings me to the basic dilemma of graduate education. It is more specialized than undergraduate training. But this does not mean, as some people seem to believe, that it is therefore more concerned with immediate applications. To draw an analogy to engineering education, graduate training is not technician training. Graduate courses in engineering sometimes have titles which are similar to the titles of courses offered in undergraduate two-year technical institutes. But the content and level of the courses are vastly different. The main difference, of course, is that the graduate courses presuppose a whole body of already acquired knowledge which the specialized undergraduate courses try to get along without.

Now, I think we can apply this idea of graduate training to technical writing. If it is to be worth a master's degree, it must build on an undergraduate program. It must be specialized, professional training, but it must not be technician training. Many people, impressed with the scope of what is called technical writing and with the varying levels of the technical writer, fear that any training will either be far too superficial to be of any use, or will omit something of immediate applicable value. This is the wrong approach. By tradition master's programs have required a single year of post-graduate work. It is perfectly clear that in a year only a few of the special skills required of a technical writer can be adequately taught. But why try to teach these special skills? Why not concentrate instead on fundamentals?

FUNDAMENTALS OF THE CURRICULUM

But this leads to the question of what are the fundamentals upon which one designs a technical writing

curriculum at the graduate level. What does the technical writer need?

First of all he needs the kind of knowledge of science and technology which will enable him to "work-up" a specific field, to understand it, and to interpret it. This implies a basic scientific background. At RPI we have specified that degree candidates must already have a bachelor's degree in science or engineering, and we have required students to continue some scientific work at the graduate level. I think we ought to be clear about this scientific knowledge, however. It provides the subject matter the man will write about. But more than that, it *should* provide the basis for acquiring further subject matter. In the nature of things, technical writers do not spend much of their time writing about the old and already established. They write about new discoveries, new developments, new methods, new processes. So their education probably does not give them their immediate subject matter. It can't. It should provide them, however, with the ability to understand new subject matter and to move forward as interpreters of some aspect of our changing technology.

The second thing the technical writer needs is ability as a writer. Now this is something which can be taught in a fairly broad way. There are many different styles and writing skills, but there is no reason why graduate training should specialize a man too much. One object has to be the development of skilled and versatile writers, but they need not be specifically report writers, or manual writers, or article writers.

The third thing that the technical writer needs is what I will call a professional attitude. If the technical writer is to be something more than a skilled technician, if his training is to be actually at the graduate level, he must have more than a trace of theory, more than a trace of history. He should know something of communications theory and semantics, and he should have learned to apply his considerable scientific knowledge to the study of communication problems. He should also have some sense of the development of his own art.

The fourth thing the technical writer needs is a knowledge of his craft. Now this, I'm afraid, is all most people think of when they think of technical writing. To me it's important too. But I've purposely put it last, to place it in perspective. (Incidentally, it is the hardest thing to justify in a graduate program.) It has to include the skills of the editor, the rewrite man, etc. It has to include legal matters pertaining to technical writing. Even here, however, we can avoid the danger of overspecialization if we're careful—if we remember that we're not trying to produce printers and bookbinders, but people who understand the processes of printing and of presenting material well enough to supervise them and to plan for them.

A SPECIFIC CURRICULUM

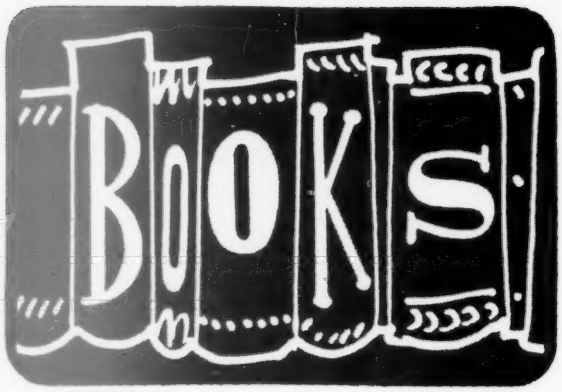
Students in the RPI program take four required courses in technical writing, each a year long. They also take a course each term in science or technology. (We assume, you see, that their undergraduate education has taken care of the first need—the need for scientific and technical knowledge.) Of the four required courses two, *Writing and Editing* and *Writing for Publication,* are concerned with developing skills in writing, the first with developing facility and the second with developing critical awareness and a high polish. But *Writing and Editing* is concerned also with all the matters which I have grouped together under the heading of the craft of technical writing. The other two courses are concerned with what I have called professional knowledge. Currently, there are four term-courses. We haven't yet achieved a year's sequence; but when we do, one course will be a course in the history of scientific and technical writing and the other in the theory of communication—both verbal and nonverbal. The latter is designed to help the student apply his considerable scientific training to the analysis of problems in this new field.

Where does the student learn the technique for writing proposals, or reports, or technical articles, or any particular variety of manuals written to government specifications? Some of these things he hears about in two or three different courses; some of them he never hears about at all. We hope he has the basis, however, for understanding these special forms, these special problems, so that he can also understand the traditional solutions—and maybe even invent a few solutions himself. Ω

About the Authors . . .

DR. STERLING P. OLMSTED *was born in Connecticut and received his education at Rollins College and at Yale. He has been a member of the faculty of Rensselaer Polytechnic Institute since 1939 and head of the Department of Language and Literature since 1953. He is a senior member of STWE and a member of the Modern Language Association, the College English Association, the National Council of Teachers of English, and the Conference on College Composition and Communication.*

PROFESSOR CHRIS SANFORD *was born in England and educated at Oxford University in natural science and chemistry. He was a teacher of English at Rensselaer from 1949 until his death last January. Professor Sanford was chiefly responsible for the establishment of the Rensselaer graduate program in technical writing and was actively engaged in teaching in the program until shortly before his death. Professor Sanford was a senior member of STWE.*



BETTER REPORT WRITING. Willis H. Waldo. New York: Reinhold Publishing Corp. (1958). $4.75.

Better Report Writing is a handy reference for some of the everyday matters of technical writing. It is directed at the technical editor and technical writer who are primarily concerned with reports. Although the book covers principles basic to all technical writing, the excellent practical examples are selected mostly from the literature of the chemical industry.

More and more, technical writing is being recognized as an area requiring the application of both psychological and aesthetic principles. For example, Chapter 1, "Emphasis on Empathy," and Chapter 5, "Put Punch in Your Writing," by G. G. Hawley are interesting approaches to these problems in technical writing.

Some useful appendixes are also contained in this book. Have you ever been handed a bibliography with a host of esoteric abbreviations for reference sources? Then, Appendix A will solve your problem with its "Journal Title Word Abbreviations." Information on hyphenation and abbreviations is contained in additional appendixes.

Better Report Writing contains little information on production processes, but for this topic there are other excellent sources such as *The Technical Report,* edited by B. H. Weil.

R. K. Rott

CREATIVE THINKING. Charles S. Whiting. 168 pages. New York: Reinhold Publishing Corp. (1958). $3.95.

This first volume of the new Reinhold Management Science Series has as its subject one which has received much comment during the past few years—that of increasing people's ability to create. Mr. Whiting is to be thanked for not filling his book with philosophical drivel that is so prevalent in writings on this subject. His book contains the rules of the game, and it is left to the reader to evaluate their effectiveness.

The author makes it quite clear throughout the book that the *operational techniques* he discusses, "are not intended to replace the more traditional methods of problem solving by logic based on a thorough analysis of the relevant facts. Rather they supplement these methods . . . ."

The first few chapters in the book discuss the creative processes, positive and negative factors effecting creativity, etc. The bulk of the book is contained in the middle chapters where the rules for the operational methods such as the forced relationship, the brainstorm, and the Gordon techniques are spelled out. The book concludes with a description of some of the creative engineering programs that are active in American industry today and suggestions of how to initiate similar programs in your own organization.

This is worthwhile reading for those who want a concise treatment of the subject.

J. F. Elliott

JOURNALISM TODAY: ITS DEVELOPMENT AND PRACTICAL APPLICATIONS. Thomas Elliott Berry. 467 pages. Philadelphia: Chilton Company (1958).

Dr. Berry is now professor of English at State Teachers College, West Chester, Pennsylvania. He was a newspaperman and a free-lance writer. His book, a rather elementary text, is meant for a survey course at the college level. For the beginner it does provide a rapid although shallow picture of modern journalism in its several phases. The first 10 chapters (the history of journalism, the news story, interviewing, the feature story, copyreading, make-up, editorial policy, the editorial, the column, and the school paper) are oriented toward newspaper work but weekly papers are not covered. The rest of the book (writing for radio and television, writing for magazines, pictorial communication, technical writing, and advertising and public relations) attempts to show the other facets of journalism in today's society. The chapter on technical writing is a disappointment to this technical writer.

The book does have many illustrations of news stories and some exercises for classroom work. These will add to its value as a text. A bibliography would have been helpful.

A. H. Lytel

SCREEN WRITING AND PRODUCTION TECHNIQUES. The Nontechnical Handbook for TV, Film, and Tape. Charles W. Curran. 242 pages. New York: Hastings House (1958). $4.95.

Few readers will lay aside this book without a sense of wonder at the fact that screen and TV shows are produced at all. Certainly a lay reader will have new respect for the accomplishments of the film industry, and businessmen may accept more willingly the high expense of video advertising.

Described as a "concise manual," the book offers in everyday language a great variety of technical detail that demonstrates not only the enormous hazards of film and tape production, but also the fact that the products are rigidly governed by the limitations inherent

in the media of screen and video. The author has traced productions from the initial idea, through the creation of a script, the budgeting, the casting, the staging, the recording, the operating within union restrictions, the editing, and all the other stages before the finished product is witnessed by the public.

The fact that the book is not directed, apparently, to any particular reader means that many men will find many things there. Though too technical for some readers, it is not technical enough for others. But it does provide an over-all view of the techniques and accompanying problems of putting scenes and sounds on our theater and TV screens. Where additional detail is required, the author cites recommended sources.

Technical writers will be interested in the heavy emphasis the author places on the need for a sense of communication and reader response in all branches of this industry.

W. Earl Britton

EDITORIAL NOTES

(*Continued from Page 3*)

"It is of great importance that the general public be given an opportunity to experience — consciously and intelligently — the efforts and results of scientific research. It is not sufficient that each result be taken up, elaborated, and applied by a few specialists in the field. Restricting the body of knowledge to a small group deadens the philosophical spirit of a people and leads to spiritual poverty." The barriers separating physics and metaphysics are fading away; and we now are facing technological developments with social, human implications we cannot ignore or evade. Our survival as a civilization may well depend on our successfully dealing with the human, as well as the mechanical, problems which lie just ahead.

No longer may we be permitted the luxury of forgetting that just outside the laboratory window lies — the city.

For the technical writer, the learning process directly involved in his work is immensely simpler than for the "creative" writer. Nearly always he knows clearly what he must learn and where he may learn it; and as the art advances, he can expect to know better the capabilities, needs, and background of his audience. Thus it is curious to me that so much of the current sound and fury over educational standards is centered on the technical writer's peculiar problem of picking up a vocabulary in his chosen field of operation. For a vocabulary is the only working tool an engineering course can offer a technical writer. Indeed, I suspect that since the engineer and the writer are so completely opposite in their goals and their methods, the engineering school that does a thorough job of it may do a writer more harm than good.

Please note that I said "engineer," not "scientist." And I used the word "engineer" in the limited sense of

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the trained designer of things. Many scientists are fine writers; some are great writers. The scientist discovers facts, assimilates them, and then as far as the language will suffice, uses words to convey his discoveries to others. So writing to some extent is a part of the scientist's job.

Writing emphatically is not the engineer's job. The successful design engineer who can write well is uncommon, and the one who likes to write is a rare bird indeed. Their minds don't work as a writer's mind must; if they did, they probably wouldn't be good design engineers. Quite rightly, engineering schools plan their curricula not only to satisfy the design engineer's skill and technical knowledge requirements, but to foster the inclinations, traits, and working habits which will produce good designers. So the writer-to-be who goes to an engineering school may find himself a misfit.

If he really learned to write first and takes to the engineering curriculum wholeheartedly, he may graduate to become that paragon, the engineer who can write.

I have serious misgivings, also, about injecting into, or superimposing on, an engineering school's curriculum a course in "technical writing." Graduate school is much too late; the character traits and inclinations that a good writer needs have been formed long before and have taken him elsewhere.

START EARLY

For the long haul, I believe our educational goal is too high and too narrow. The place to begin training technical writers is in the elementary school, with the fundamentals of communication by words — grammar, spelling, sentence structure, and semantics. We must start in the home with self-discipline and clear thinking and critical analysis. Everyone who has been involved in recent years with the training of writers is painfully aware of the disgraceful job we have done for the past decade in teaching these fundamentals to our children: the college graduates who can't spell or make a good sentence and fail to see any good reason why they should be obliged to do so; adults who are unhappy and lost unless every detail of their work is planned and outlined for them in advance. These people are simply blank-fillers, not writers, regardless of the courses they have slept through and the true-false examinations they have passed on the percentages.

TECHNICAL WRITING AND JOURNALISM

If we must have formal courses in technical writing — and I am not yet convinced that we must — let it be in the journalism school, for the techniques of journalism fit very well in technical writing. A newspaper reporter who likes to work on his car probably will be happy and successful in a technical writing assignment.

I speak from experience. I was trained as a writer from childhood by a journalist father. Dad also encouraged my natural bent toward seeing what made

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things tick, and an uncle who was a fine mechanic taught me to respect tools, to admire craftsmanship, and to enjoy working with my hands.

For the past eight years, I have been planning, writing, and editing aviation technical publications, from pilot's and owner's manuals to bulletins and service hints. Yet I have never laid a wrench on an airplane or sat in the pilot's seat with the engine running. The fact that I have some mechanical ability has been valuable, of course, in making the learning job easier, but the techniques of the journalist have been the ones I have used, day in and day out. They have proved indispensable.

I was obliged, of course, to learn the language of the aircraft industry, the new names and special meanings, the esoterics and semantics of aviation. But while I have been obliged to resolve a performance curve into how much fuel it takes to go to Kansas City, I have found it by no means necessary to know how to run a fuel-flow test and construct the curve and still less to know how to design a wing. The writer's task is not creation, but interpretation. *His primary concern is to make certain his reader will understand,* and while he must know enough of the language of his special field to understand it himself, *he must strive constantly to understand it from the viewpoint and in the idiom of his reader.*

I think failure to recognize that our goal is to serve our readers is the reason so much technical writing is stodgy, redundant, obscure, and boring, filled with ponderous polysyllables which say very little and that badly. We waste our reader's time, which is precious to him even if ours isn't to us, and in doing so we defeat ourselves.

Back in the first part of this polemic, I used the word ancillary. I hope you looked it up and found it was a ponderous polysyllable that didn't mean quite what I intended. That's why I used it there. The first time I encountered it, the word was used in a technical article and I discovered it didn't say quite what that author intended either. Doubtless he thought it looked impressive, but he didn't know his semantics; for it simply irritated me, and my *irritation is all I remember of that article.*

Let's face it — this is a trap that the engineer-turned-writer is more apt to fall into than is the writer who, one way or another, got into an engineering department. For a writer's training, if it is good training, orients him toward his reader and teaches him that redundancy and obscurity are high treason. He respects his reader's time and takes no more of it than necessary; he avoids the esoteric like the plague, knowing that the instant his snobbery shows through, his reader is gone. And the trained writer knows that his reader doesn't care about his erudition; the only way to impress him is with impressive ideas, clearly stated.

We've had too much bad technical writing, and I am convinced that the reason we have it is because we've become so concerned with the technicalities of our subject matter that we've forgotten about the techniques and disciplines of writing.

Let's get the horse between the shafts again: Technical writing really is writing (technical).

NEW HOME, PRINTING PROCESS FOR *REVIEW*

Beginning with this issue, the *Review* has a new home. The journal is now being published in Cincinnati, which is only a short distance from the STWE national business office in Columbus.

The change of publication site was due primarily to the Editor's change of employment, which fortunately brought him nearer to our centrally located national office. (Allan Lytel now holds the position of Manager of Proposals for the Crosley Division, AVCO Corporation in Cincinnati.)

Although it is probably not discernible to the average reader, a different printing process is now being used. The photo-offset rather than the letterpress method is being employed. This change has two distinct advantages. First, more illustrations (especially line art) can now be used in the journal without greatly increasing the production cost. Second, advertisers will find it easier to furnish their layouts in photo-copy form rather than in mats or plates, as was formerly required. It is hoped that this advantage will be an inducement to advertisers. Increased revenue from advertisers would of course help improve the financial picture for the *Review*.

EDITORIAL STAFF FORMED

With the move of the *Review* to Cincinnati, a new editorial staff has been formed, with A. Stanley Higgins as Assistant Editor. A charter member of TWE (one of the organizations that merged into STWE), Higgins was formerly a member of the editorial staff of the *TWE Journal*. He has served on various committees of the TWE and STWE, and is immediate past president of the Cincinnati Chapter. Employed by the General Electric Company, Higgins is Supervisor of Controls Technical Publications at the Cincinnati plant. His experience with the company has included teaching a course in technical writing to engineers for two semesters. Before coming to Cincinnati, he was supervisor of the McGraw-Hill editorial group in Oak Ridge which published the National Nuclear Energy Series of books for the Atomic Energy Commission.

Other members of the editorial staff are Mrs. Cleo Gray and John Sullivan, of the G. E. Aircraft Nuclear Propulsion Department, and Miss Shirley Emhoff, of the G. E. Flight Propulsion Laboratory Department. Ω

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NEWS AND VIEWS

(*Continued from Page 17*)

$6000 to $10,500 government employees fared better than private, about 72 percent being in this range as against 64 percent of private employees.

Many questionnaires in the survey showed that organizations use technical writers for more than one function, some involved for as many as six of the nine categories listed.

The organization membership percentage is low. Furthermore, some of these reported memberships are in other organizations such as the Medical Writers' Association. Apparently the local chapters enroll less than 10 percent of the total population of technical writers and editors. This assumption is certainly justified for other metropolitan areas such as Baltimore, New York, Chicago, and Boston.

IRE - PGEWS NEWS

A few months ago I received a copy of the January 1959 issue of the *PGEWS Transactions,* and I must congratulate the editor, John M. Kinn, Jr., for another fine issue. This issue contained ten papers, most of which were presented at the Second National Symposium of IRE-PGEWS. Familiar STWE names listed among the authors were Harry F. Arader, P. M. Beatts, and Frederick T. Van Veen. Several papers were devoted to various aspects of oral presentations such as "Microphone Technique," "Running Your Own Projector," and "Can They See What You Say When You Speak?" The other papers dealt mainly with the problem of making yourself understood when you write.

The Engineering Writing and Speech session at the IRE Convention in March was extremely well attended and the papers presented were very enlightening to the engineers present. John L. Kent, of the Datex Corporation, Monrovia, California, presented a paper titled "Using the Psychological Approach in Scientific Writing." Mr. Kent's contention was that the engineer-writer should use the same approach as the professional writer — planning, outlining, overcoming blocks in the path of writing, confidence in face of criticism, and enthusiasm.

Alexander H. Cross, Raytheon Manufacturing Company, Wayland, Massachusetts, suggested "A Self-Improvement Program for Engineering Writers." Mr. Cross commented that the criteria — clarity, information, and advancement — for technical publications could be improved immensely if the engineer-writer would (1) attend writing workshops and lectures, (2) practice writing at least one hour a day, (3) study textbooks and trade journals in the writing field, (4) obtain speaking practice through paper presentations, (5) learn to use reference books properly, and (6) devote some time to entertaining but informative reading.

Sol Cohen, Ampex Corporation, Redwood City, California, spoke on "Subjectivity Versus Objectivity in the Technical Report." Mr. Cohen stated that the true purpose of the technical report is to aid in making decisions. Thus no matter how objective the writer may be, he still has to be subjective in his report.

We congratulate E. K. Gannett of the Institute of Radio Engineers for his fine job of chairing this session.

FOURTH ANNUAL WORKSHOP AT TUFTS

The Fourth Annual Workshop in Technical Writing will be held on the Tufts University campus for the two-week period July 6 to July 17. Enrollment will be drawn from representatives of industry and government and others actively concerned with problems of technical writing and technical publication. No formal prerequisites are set for admission.

Workshop Director is John H. Mitchell, communications consultant and assistant professor of technical writing, University of Massachusetts. Associate Director is Dr. Paul H. Flint, acting dean of the Tufts Graduate School and past president, Society of Technical Writers.

A partial list of the staff includes Donald G. Abbott, director of publications, Tufts University; Harold G. Buchbinder, publisher, *Electromechanical Design;* Michael DiBartolomeis, senior member, Technical Staff, Radio Corporation of America, Waltham; John W. Fallon, assistant publications director, Sanders Associates, Inc.; Emily P. Flint, managing editor, *The Atlantic Monthly;* Hyman Kana, technical editor, Raytheon Manufacturing Company; Leonard J. Linnehan, copy director, Henry A. Loudon Agency; Robert K. Schnitzler, head of publications, Advance Industries, Inc.; and Kenneth A. Young, president, Kenneth A. Young Associates.

GENERAL ELECTRIC SYMPOSIUM

The value of sharing techniques and problems in technical publications work on a company-wide basis is well recognized by at least one large concern — the General Electric Company. Each spring for the past three years, G. E. has arranged a two-day technical-publications symposium that is open to all the company's supervisors and specialists in the field. This year's symposium was held in Utica, New York, with the Light Military Electronics Department as host. Eighty G. E. employees, representing twelve departments located in various parts of the country, were present for the symposium. Some of the session topics were Organizing Material for Complex Proposals, Problems of the Internal Art Section, Use of Vendor Services for Technical Publications, Management of the Printed Sales Brochure, Services of the Internal Printing Operation, and the System Approach to Presentations.

Next year's symposium is scheduled to be sponsored by the Missile and Space Vehicle Department in Philadelphia. Ω

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LETTERS

(*Continued from Page 2*)

This function is more technique than art; it is a teachable technique; it requires experience and talent; it is a profession worthy of that term. Lack of proper editing is not only the major roadblock to communications today, it is the great unrecognized need of our day. It is lack of editing that permits demagogs to twist facts, that permits sophists to appear profound, that permits gobbledegook to occupy most of our precious means of written communications, that permits these precious pages in the field of science to be used for communications only between a few experts, actually cutting out the masses who are the intended audience.

It can be shown that the writer should not be the editor, and vice versa, because it is a rare man who can see the difference between what he meant to say and what he actually said. This is the function of the editor.

Mr. Cohn says "can we hear from Aronson on editing?" I will be delighted to submit a stream of paragraphs to you, each taken either from a manuscript or a printed page, and each illustrating either the function, or the lack, of editing (the transformation of what the author said into what he meant to say). There is no lack of this type of material.

Milton H. Aronson, Editor

Instruments and Control Systems

February 11, 1959

To Editor, *STWE Review*:

One possible mode of providing wide interest in STWE is to analyze membership specialties locally, regionally, and nationally and to prorate programs accordingly. I believe this, in part, to be what Dr. Light advocated in his letter published in the January 1959 *Review*. Beyond this he is advocating a disproportionate attention (according to our membership distribution) to splinter groups in the hope that such attention will attract more of them and thus make our organization more heterogeneous, specialty-wise, and therefore more representative of the technical writing and editing profession. With this goal I am in complete agreement. I would like to see in our Chapter, for example, many more medical, biological, sanitation, and chemical writers. I would like to see more editors of technical house papers and news science writers. These people have in their splinter groups nothing we cannot offer.

After much consideration of this problem, I am convinced that the proper way to encourage the attendance of a wide group of different subject matter specialists is to have speakers who can speak on topics and problems of general interest to all. As a psychological fillip it seems reasonable to have a secondary goal, representation among speakers from many subject matter specialties.

This we, in Washington, have done. We have had speakers from chemical, agricultural, medical, engineering, and general educational fields. Almost all of them spoke about problems, as did Mr. J. Stewart Hunter at the 1958 convention, that were applicable to all the writing groups.

Why then have we signally failed to capture some groups in our membership, specifically medical writers, aviation news writers, newspaper science writers and a few others? I believe that this failure results almost wholly from three sources:

1. Inadequate to poor publicity about the Society, its aims, programs, and accomplishments.

2. A natural reluctance on the part of established groups to consider the possibility of the superiority of new, insurgent, and partially competing groups.

3. Low to mediocre accomplishments. On this score I believe our chapter programs in recent years have, in general, been excellent. If they have not attracted medical science writers, etc., then I believe the fault really does lie with the medical science writers. However, our efforts with respect to professional development and "touting" of the profession have, in my opinion, been less than adequate.

We must, as a group, work for dollar parity with the technical specialty we serve; we must be constructive in these efforts and foster higher job standards than we now have, always underlining the "technical" in technical writer (editor). We must foster formal education programs in our colleges and universities, including semester courses, workshops, and curricula leading to a B.S. in technical writing, editing, or journalism.

We must, in short, become the recognized spokesmen for the technical writing and editing profession, and in so doing we will find the splinter groups coming to us.

H. Lee Shimberg, Chairman

Professional Development Committee
Washington Chapter

To Editor, *STWE Review*:

Let Me say at the outset that this is not about Money. Neither is it about Engineering. It deals with Engineers and why They capitalize when writing Engineering Reports.

Of course everyone knows the Rules of Grammar that deal with Capitalization. You always start a sentence with a Capital, but let's see how you handle a number such as 00. 100 to 1 chances are You missed the period at the end of the sentence, because you can't capitalize a number. That means you spell it out or move it to another part of the sentence.

Why do I capitalize *"Engineering Reports"?* Well, obviously They are important. I want to emphasize the fact, so I capitalize. What's more, I use quotes; and not to be outdone, I italicize. Don't tell me you have never seen it done! You protest that Your "Standard Package" is different from all other standard packages. I wasn't there when it was born so I can't say if it is a proper name of a person, place, or thing. All this sounds confusing, and with Electronic Circuits one can't be sure if AND and OR or Not Or are Logic or logical.

Why should an on-off switch be promoted to an ON-OFF SWITCH? Is it more important than the Program Stop Button, or the read-write channel? After you have glorified the Upper Pinion Dog Clutch Shear Pin, the Timer Single-Cycle Key Click, and The Drop-Out And Reverse Shaft, is there anything left in the machine that is not important?

Enough said; the case may rest. I can only urge moderation. Your capital should have meaning; therefore use it sparingly and in the right places.

Quotes and underscores can also be used for effect. Use caps or quotes when a new term that is not used in its usual sense appears for the first time, but thereafter do not re-introduce it with caps or quotes. The use of AND, Or, or "not or" may be permissible if the meaning is obscured without the warning emphasis.

Be consistent in Your Usage so that the Reader will not be Constantly startled by Your Fancy Footwork. Observe these simple rules and you won't have to fear the editor's red pencil.

Walter Brandenberg

IBM Corporation
Poughkeepsie, New York

Society of Technical Writers and Editors

CANONS OF ETHICS

Adopted by the Executive Board, October 4, 1958

DEFINITIONS

As used herein, the term *member* shall be construed to mean any grade of member as defined in the Constitution of the Society of Technical Writers and Editors. The term *Specialist* shall refer to anyone qualified for membership in the STWE, whether or not that person is a member. The term *specialized* shall refer to the sum of skills, knowledge, and experience possessed by the *Specialist*.

FOREWORD

Honesty, justice, and courtesy form a moral philosophy which, associated with mutual interest, constitute the foundation of ethics. The member should recognize such a standard, not in passive observance, but as a set of dynamic principles guiding his conduct and way of life. It is his duty to practice his profession according to these Canons of Ethics.

As the keystone of professional conduct is integrity, the member will discharge his duties with fidelity to the public, his employers and clients, and with fairness and impartiality to all. It is his duty to interest himself in public welfare, and to be ready to apply his special knowledge for the benefit of mankind. He should uphold the honor and dignity of his profession and avoid association with any enterprise of questionable character. In his dealing with his fellows he should be fair and tolerant.

PROFESSIONAL LIFE

Section 1. The member will cooperate in extending the effectiveness of his profession by interchanging information and experience with others in his field and students and by contributing to the work of all professional societies, schools, and professional journals.

Section 2. He will not advertise his work or merit in an untruthful manner, and he will avoid all conduct or practice likely to discredit or do injury to the dignity and honor of his profession.

RELATIONS WITH THE PUBLIC

Section 3. The member will endeavor to extend public knowledge of his field, and he will discourage the spreading of untrue, unfair, and exaggerated statements regarding that field.

Section 4. He will have due regard for the safety of life and health of those who may be affected by the work for which he is responsible.

Section 5. He will express an opinion only when it is founded on adequate knowledge and honest conviction while he is serving as a witness before a court, commission, or other tribunal.

Section 6. He will not issue *ex parte* statements, criticisms, or arguments on matters connected with public policy which are inspired or paid for by private interests, unless he indicates on whose behalf he is making the statement.

Section 7. He will refrain from expressing publicly an opinion on any subject in his field of speciality unless he is informed as to the facts relating thereto.

RELATIONS WITH CLIENTS AND EMPLOYERS

Section 8. The member will act in professional matters for each client or employer as a faithful agent or trustee.

Section 9. He will act with fairness and justice between his client or employer and the contractor when dealing with contracts.

Section 10. He will make his status clear to his client or employer before undertaking an engagement if he may be called upon to decide on the use of inventions, apparatus, or any other thing in which he may have a financial interest.

Section 11. He will guard against conditions that are dangerous or threatening to life, limb, or property on work for which he is responsible, or if he is not responsible, will promptly call such conditions to the attention of those who are responsible.

Section 12. He will present clearly the consequences to be expected from deviations proposed if his specialized judgment is overruled by nonspecialized authority in cases where he is responsible for the adequacy of the work.

Section 13. He will engage, or will advise his client or employer to engage, and he will cooperate with other experts and specialists whenever the client's or employer's interests are best served by such service.

Section 14. He will disclose no information concerning the business affairs or technical processes of clients or employers without their consent.

Section 15. He will not accept compensation, financial or otherwise, from more than one interested party for the same service, or for services pertaining to the same work, without the consent of all interested parties.

Section 16. He will not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with his client or employers in connection with work for which he is responsible.

Section 17. He will not be financially interested in the bids as, or of, a contractor on competitive work for which he is employed unless he has the consent of his client or employer.

Section 18. He will promptly disclose to his client or employer any interest in a business which may compete with or affect the business of his client or employer. He will not allow an interest in any business to affect his decision regarding work for which he is employed, or which he may be called upon to perform.

RELATIONS WITH MEMBERS

Section 19. The member will endeavor to protect his profession collectively and individually from misrepresentation and misunderstanding.

Section 20. He will take care that credit for specialized work is given to those to whom credit is properly due.

Section 21. He will uphold the principle of appropriate and adequate compensation for those engaged in specialized work, including those in subordinate capacities, as being in the public interest and maintaining the standards of the profession.

Section 22. He will endeavor to provide opportunity for the professional development and advancement of specialists in his employ.

Section 23. He will not directly or indirectly injure the professional reputation, prospects, or practice of other specialists. However, if he considers that a member is guilty of unethical, illegal, or unfair practice, he shall call such matters to the attention of the Standards and Ethics Committee for such action as the Committee, the Board, and the Society may deem proper and fitting.

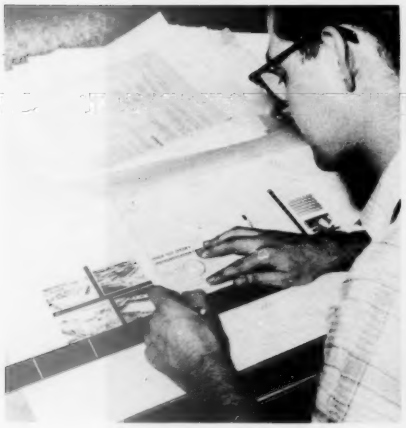
Section 24. He will exercise due restraint in criticizing another specialist's work in public, recognizing the fact that the professional societies and their press provide the proper forum for technical discussions and criticism.

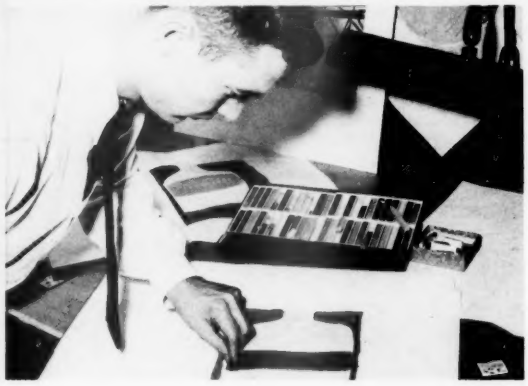
Section 25. He will not try to supplant another specialist in his field in a particular employment after becoming aware that definite steps have been taken toward the other's employment.

Section 26. He will not compete with another specialist on the basis of charges for work by underbidding, through reducing his normal fees after having been informed of the charges named by the other.

Section 27. He will not condone the work of specialists who do not conform to ethical practices.

(Based on statement developed and promulgated by the Engineers' Council for Professional Development as a standard for all national engineering society groups.)





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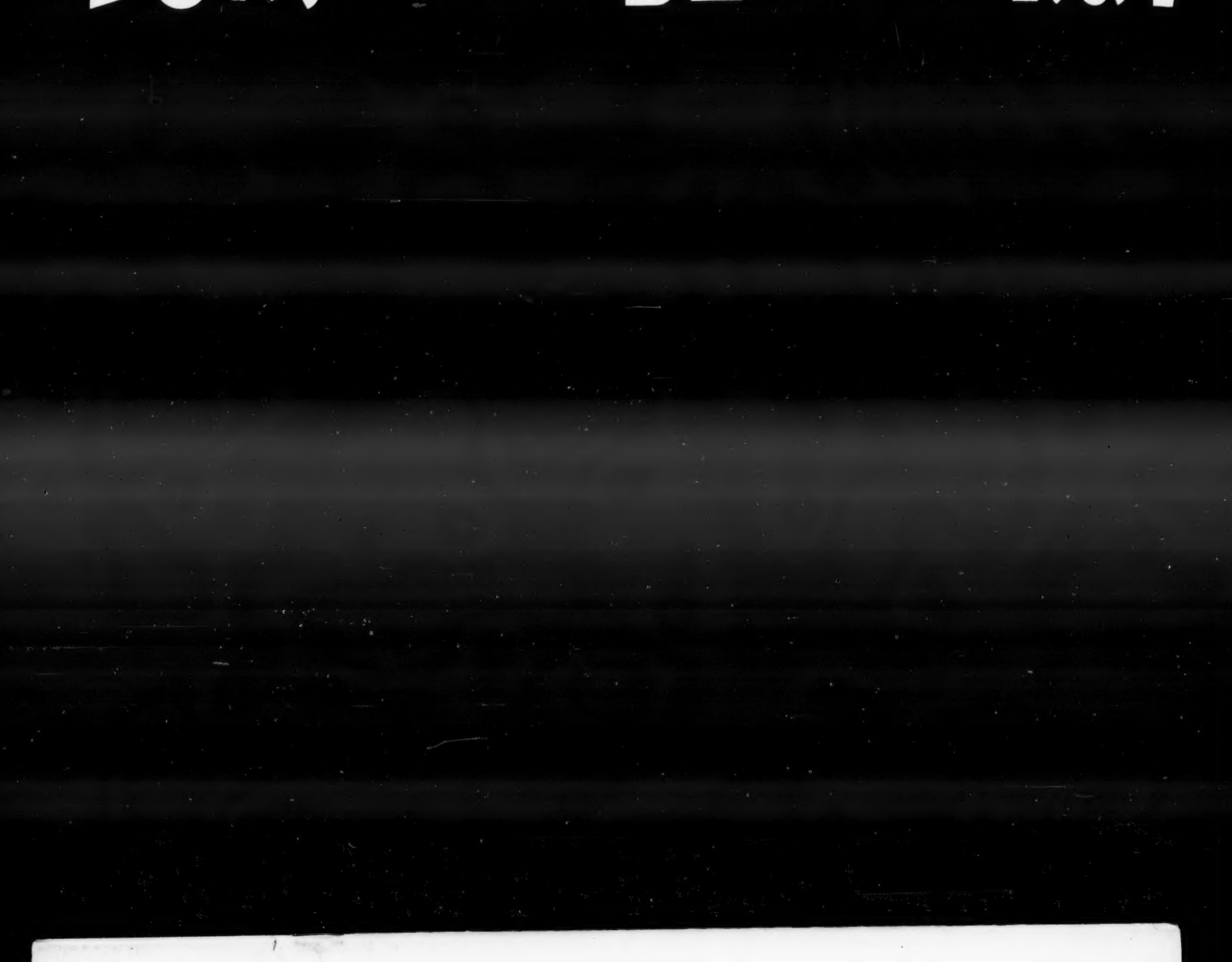
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